WASHTENAW COMMUNITY COLLEGE BULLETIN

Volume 28
Number 3

Programs and Services

1998-1999

Washtenaw Community College

Campus Telephone/ Office Directory

Academic Skills Center	LA 109	973-3301
Admissions	SC 221	973-3543
Adult Resource Center	SC 227	973-3528
Adult Transitions/Job Skills Academy	LA140	677-5006
Alumni Association	SC 207	973-3492
Apprenticeship and Trade Related Programs	OE 170	973-3533
Articulation Services	SC 234	973-3706
Bookstore	SC 142	973-3594
Campus Safety/Security	PO	973-3411
Cashier	SC 2nd floor	973-3485
Children's Center	FE	973-3538
Community and Business Relations	SC 207	973-3306
Continuing Education Services	ML 104	677-5027
Counseling, Career Planning & Placement	SC 227	973-3464/677-5124
Curriculum	SC 234	973-3706
Dean of Business	BE 100	973-3724
Dean of Alternative Education	SC 207	677-5003
Dean of Health/Public Services	OE 102	973-3474
Dean of Humanities/Social Science	LA 136	973-3356
Dean of Learning Resources	SC 325	973-3379
Dean of Math/Natural Sciences	LA 148	973-3722
Dean of Technology	TI 214	973-3441
Dental Clinic	OE110	973-3337
Eastern Regional Center	308 Harriet Street, Ypsilanti	480-9950
Extension Services and Distance Learning	LA 230	677-5028
Financial Aid	SC 223	973-3523
Information Center	SC 225	973-3622
Institute for Workforce Development	ML 104	677-5016
Learning Resource Center	SC 3rd floor	973-3429
Lost and Found	PO	973-3502
Math Center	LA 320	973-3392
Northern Regional Center	7878 Brighton Road, Brighton	(810) 229-1419
Placement/Transfer Center	SC 227	677-5155
Public Service Training Program	ML 106	677-5024
Registration	SC 221	973-3548
Southern Regional Center	200 North Ann Arbor St., Saline	429-8153
Student Activities	SC 227	973-3528
Student Records	SC 221	973-3548
Switchboard (General Information)	SC 225	973-3300
Telecourse Hotline		677-5056
Testing Center	LA 101	973-3634
Veteran Certification	SC 221	973-3545
Vice President for Instruction and Student Services	SC 235	973-3488
Western Regional Center	114 North Main Street, Chelsea	475-5935
Workplace Learning	SC 108	973-3421
Writing Center	SC 315	973-3647

Building Abbreviations

BE — Business Education Building
FE — Family Education 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

1998-99 Academic Calendar

Fall Semester 1998

September 8	Classes Begin
November 26-29	Thanksgiving Recess (no classes)
December 21	Fall Classes End

Winter Semester 1999

January 11	Classes Begin
January 18	M.L. King Holiday (no classes)
February 23-27	Winter Recess (no classes)
May 3	Winter Classes End

Spring/Summer Semester 1999

May 10	Classes Begin
May 24	Memorial Day (no classes)
June 30	7½ Week Spring Classes End
July 4	Independence Day Holiday (no classes)
July 19	10 Week Spring Classes End
August 23	15 Week Semester Classes End

Summer Session 1999

July 1	7½ Week Summer Classes Begin
July 4	Independence Day Holiday (no classes)
August 23	7½ Week Summer Classes End

The Washtenaw Community College Bulletin is issued four times a year in February, July, August and October by: WASHTENAW COMMUNITY COLLEGE 4800 E. HURON RIVER DRIVE, P.O. BOX D-1 ANN ARBOR, MI 48106-1610.

Periodicals postage is pending at Ann Arbor, Michigan. POSTMASTER: Send address changes to: WASHTENAW COMMUNITY COLLEGE P.O. BOX D-1 ANN ARBOR, MI 48106-1610

World Wide Web Site Address

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

http://www.washtenaw.cc.mi.us

Graphic design and production by WCC Promotional Services.

Rev: 7/98

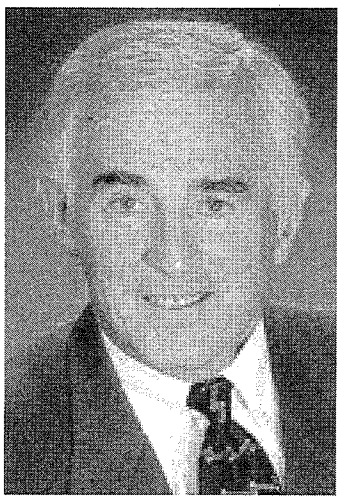
Volume 28 Number 3

Programs and Services

1998-1999

Washtenaw Community College

Greetings From President Larry L. Whitworth



On behalf of the faculty, staff and administration, I wish to welcome you to Washtenaw Community College. If you are currently a student, let me congratulate you on your decision to actively take charge of your future by continuing your education. If you are not currently a student, let me encourage you to make the decision to continue your education and to recommend that you consider Washtenaw Community College, one of the finest community colleges in the country. Washtenaw County has been a generous supporter of the college and the County's commitment to higher education allows us to offer you an educational experience of exceptional quality.

Washtenaw Community College has a comprehensive mission that includes broad-based transfer programs, occupational programs, vocational/technical programs, non-credit programs, and academic preparation classes. Our programs come in various lengths and levels of complexity. Our associate's degree programs are designed to be completed in two years for students who are attending full-time. Our certificate programs are designed essentially as one-year programs, and our apprenticeship programs can last from three to five years depending on the trade.

Our transfer programs enable individuals to complete the first two years of a baccalaureate program in fields as diverse as accounting, biology, humanities, natural sciences and social sciences. The College offers a large number of high demand occupational programs, such as Computer Systems Technology, Electronics, Heating and Air Conditioning, and Respiratory Therapy. Our vocational/technical programs such as Automotive Service Technology, Electronics Technology, and Welding Technology are designed to prepare people for immediate assimilation into the workplace.

The programs mentioned here are only a few examples of the nearly 100 programs of study available at Washtenaw Community College. Please take some time and review the catalog. You will certainly find a program that will expand your future opportunities.

The College also offers many additional services, such as financial aid, personal and professional counseling, academic skills brush-up, and tutorial services. Our financial aid advisors work with students of different income levels to assist in identifying appropriate financial aid vehicles from the variety of Federal, State, and College financial aid programs, along with available WCC Foundation scholarships. Whatever your particular need is, whether it is financial, academic refresher, or career counseling, you will find the staff at WCC dedicated to helping you prepare for the future.

The College is proud of its academic developmental studies program. The evidence suggests that most adults who have been away from school for a number of years require academic brush-up in at least one of the following areas: mathematics, English composition, and reading comprehension. The staff and faculty at WCC can assist in strengthening skills in these areas.

All of the current evidence suggests that the future will belong to the "knowledged workers." Only through continuous education, can you prepare yourself to be a "knowledged worker." But, it is important to recognize that not only is your economic viability enhanced by continuing your education, the quality of many aspects of your life can be greatly enriched. Exposure to the arts and humanities can expand your understanding of the beauty of the world around you; exposure to the social sciences can help to build the intellectual foundations to enable your appreciation of the richness of human diversity; and exposure to the sciences can develop your skills of analysis and problem solving. Your future and the future of the people who depend upon 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.

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's 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's 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.

WCC 2000 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 underserved 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.

Accreditations

Institutional:

Accredited Member of the North Central Association of Colleges and Secondary Schools
159 N. Dearborn
Chicago, Illinois 60661
(312) 263-0456; (800) 621-7440
www.ncacihe.org
info@ncacihe.org

Program Accreditations:

Business Programs Accredited by The Association of Collegiate Business Schools and Programs

Correctional Science Program Certified by Michigan Correctional Officers' Training Council

Dental Assisting Program Approved by American Dental Association

Law Enforcement Basic/ Preservice Program Approved by Michigan Law Enforcement Officers Training Council

Nursing Associate's Degree Accredited by National League for Nursing
Program Approved by Michigan Board of Nursing

Pharmacy Technology Program Accredited by American Society of Health System Pharmacists

Radiography Program Accredited by Joint Review Committee on Education in Radiologic Technology

Respiratory Therapy Program Accredited by Joint Review Committee for Respiratory Therapy Education

Surgical Technology Program Accredited by Commission on Accreditation of Allied Health Education Programs

Approved by the State Department of Education, State of Michigan

An Affirmative Action/Equal Opportunity Institution

Inquiries concerning college or program accreditation should be directed to the Office of the Vice President for Instruction and Student Services, Student Center Building, Room SC 235.

Table of Contents

Statement of Mission and Values IV

General Information 4

Admission 10

Student Records 16

Financial Information 20

Student Support Services 26

Learning Support Resources 32

Business and Community Services 36

Alternative Education 40

Academic Policies 44

Campus Information 54

Program Listings 58

Course Descriptions 112

Organizational Charts 200

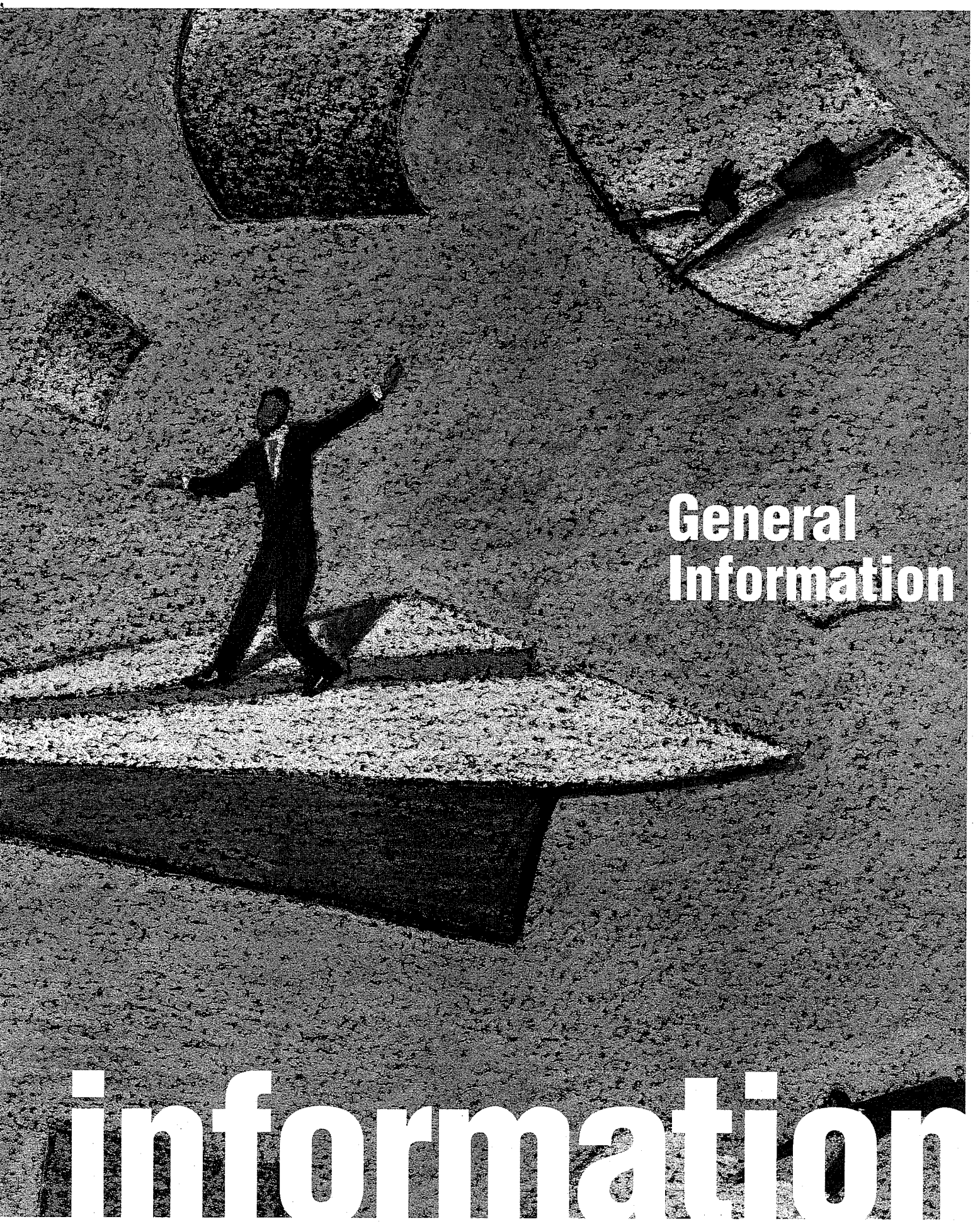
Personnel 206

Glossary 226

Index 232

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 July 10, 1998 and is subject to change without notice.

general


General
Information
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 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 Builidings and the Liberal Arts and Sciences Building. Today, more than 16,000 students are enrolled annually in credit courses and an additional 5,500 are enrolled in non-credit offerings each year.

Profile of Washtenaw Community College

WCC schedules courses on a semester calendar, and enrolled 10,537 students for the Fall 1997 semester. The college employs approximately 170 full-time faculty and more than 450 part-time faculty throughout the academic year. College credit programs of study cover over 73 areas in business, health and public services, humanities and social sciences, math and natural sciences, and technology. More than 50 per cent 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 700 students.

College Governance

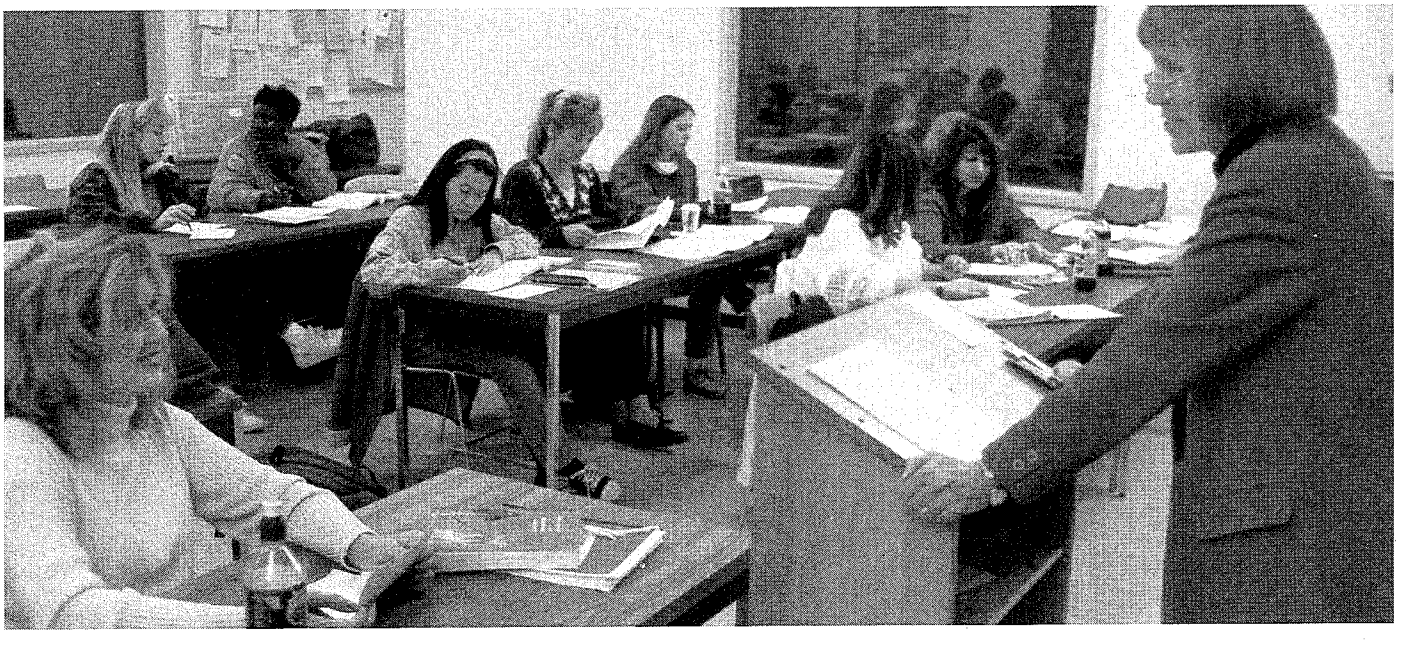
Washtenaw Community College strives to do its work so that all programs, services, systems, policies, and staff talents are aligned toward the vision of achieving student, community, and staff success. The design of WCC's work helps to shape a college culture of trust, caring, empowerment, good relationships, high achievement and pride.

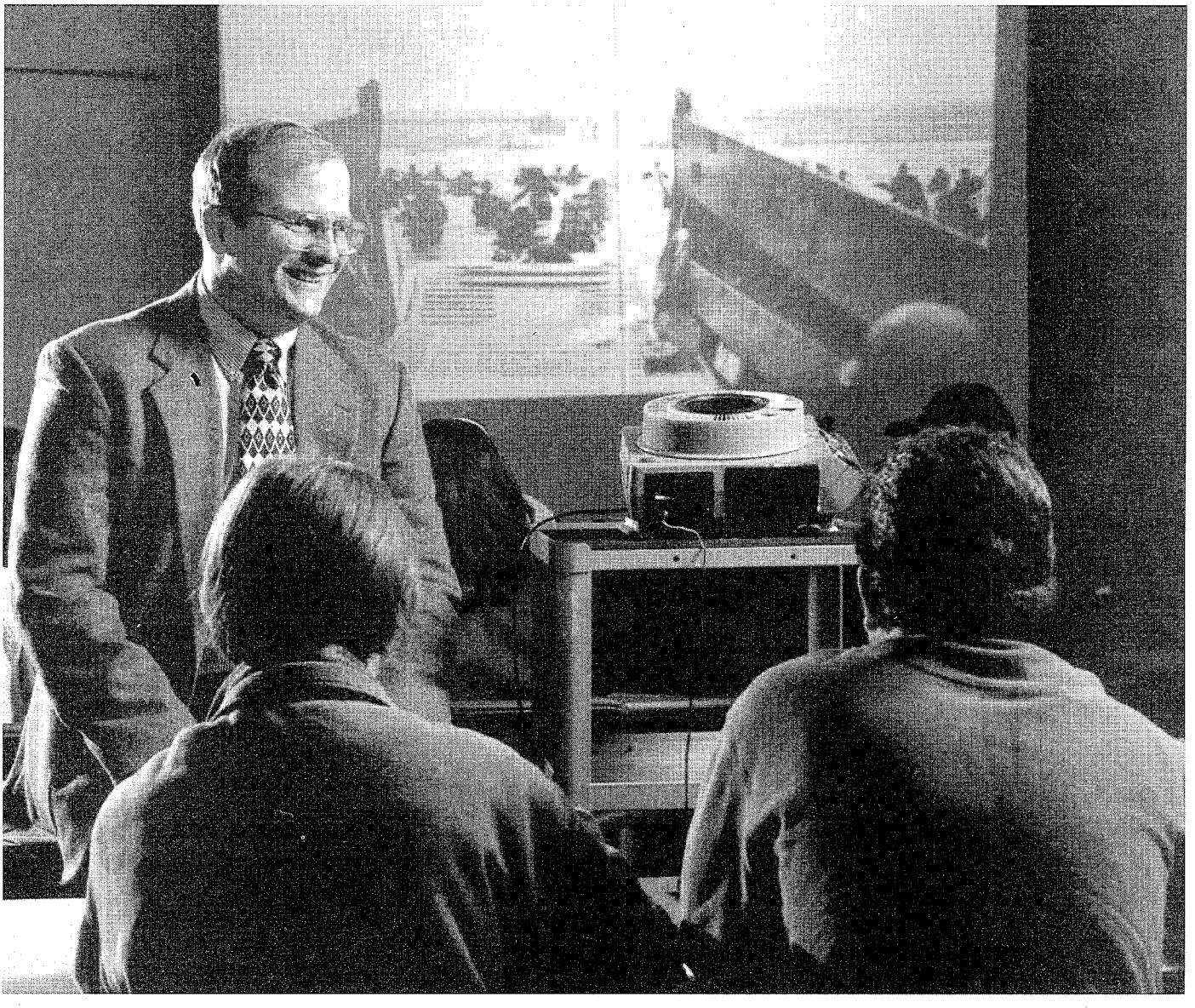
WCC also strives continually to learn how to improve learning. Each staff member has unique perspectives and valuable talents to bring to this goal. The college governance structure is designed and updated frequently to achieve this goal. A major component of the structure is the use of cross-functional teams that include community, student, and staff groups. These groups are involved in setting institutional priorities and general college governance. They promote the building of positive relationships among staff groups and create an environment which uses individual talents to improve college programs and services. The structure strives to build teamwork among and between these groups and empower teams to solve problems and improve systems.

The Student Assembly is also an important part of campus governance. Through this structure students engage in self governance and also interface with other college governance bodies.

Regional Centers

Regional Centers provide a continuing and consistent WCC presence in each community. This outreach initiative is in response to population growth trends, economic change, technological development, and a stronger demand for post-secondary education in the communities served by the college. A consistent college presence is established at four of the regional centers – Chelsea, Saline, Ypsilanti and Brighton. These centers have been actively involved in course offerings, student counseling, registration, and student recruitment. Classes are also offered at facilities in various school districts.





Current Facilities

Today, the WCC main campus includes four buildings 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 Student Center Building houses the Learning Resource Center, extensive 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; and instructional space for art, drama, music, speech, the police academy and public service training and the Institute for Workforce Development.

Types of Study

There are many educational goals that may be obtained by attending WCC. These goals are realized by taking 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 or 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. Through the Institute for Workforce Development, programs including employee training and skills upgrading classes are tailored for specific businesses and industries. The Job Skills Academy, as part of the Adult Transitions Program, offers training for the unemployed — from counseling and skill assessment through actual training and job placement. The Technical Training Office offers coursework to fulfill apprenticeship requirements. In addition, the offices of Continuing Education Services and Extension Programs offer credit, credit-free, and televised class instruction.

Programs of Study

2-year associate's degree and 1-year certificate programs.

See the Academic Policies section of this catalog for an explanation of the various degree designations.

Associate in Applied Science

Accounting

Administrative Assistant Technology

Business Computer Programming

Business Management

Business Marketing

Child Care

Construction Management

Criminal Justice – Law Enforcement Certification

(Police Academy)

Culinary Arts

Electrical Engineering Technology

Hotel-Restaurant Management

Human Services

Mechanical/Manufacturing Engineering Technology

Medical Administrative Assistant Technology

Microcomputer System Support

Nursing

Radiography

Respiratory Therapy

Scientific and Technical Communication

Associate in Arts

Correctional Science

Criminal Justice

Human Services – Transfer

Liberal Arts Transfer – Humanities/Social Sciences

Associate in Science

Computer Science – Transfer

Liberal Arts Transfer – Math/ Natural Sciences

Pre-Medicine Transfer – Biology Option

Pre-Medicine Transfer – Chemistry Option

Nursing – Transfer

Pre-Engineering Science – Transfer

Pre-Engineering Science – Chemical and Materials Engineering Option

Associate in Technical Studies

Architectural Drafting

Automotive Body Service

Automotive Service Technology

Computer Aided Drafting – Electronic

Computer Aided Drafting – Mechanical

Electronics Technology

Fluid Power Technology

Graphic Design Technology – Design

Graphic Design Technology – Illustration

Industrial Drafting Technology

Journeyperson Industrial

Machine Tool Technology

Numerical Control Technology

Photographic Technology

Photographic Technology – Marketing Option

Quality Control Technology – Electronics Option

Quality Control Technology– Management Option

Quality Control Technology – Science and Engineering Option

Quality Control Technology – Specialty Option

Refrigeration and Air Conditioning

Robotic Technology

Welding Technology

Associate in General Studies

Business Concentrations

Health/Public Services Concentrations

Humanities/Social Sciences Concentrations

Math/Natural Sciences Concentrations

Technology Concentrations

The Associate in General Studies Degree is awarded with an emphasis in one of the five instructional divisions listed above. The emphasis is determined by the following: The student's credits in each of the five divisions are totaled. The division with the greatest concentration of credits is the area of emphasis. In cases where students have 30 or more credits in more than one division, or have two or more areas that are tied for the greatest concentration of credits, they may apply for their desired area of emphasis. Any additional division requirements for an area of emphasis must also be met. The diploma will read "Associate in General Studies," without a divisional area listed. Student transcripts will specify the divisional area.

Mastery Certificate Programs

Administrative Assistant Technology

Architectural Drafting Detailing

Automotive Body Repair

Automotive Mechanics

Automotive Spray Painting

Business Sales

Computerized Accounting

Computer Systems Technology

Correctional Science

Dental Assisting

Digital Prepress

Drafting Detailing

Electronics Technology

Food Production Specialty

Hydraulic Assembly

Information Processing Technology

Medical Administrative Assistant Technology

Numerical Control Machine Operations

Photographic Assisting

Surgical Technology

Toolroom Machine Operation

Welding Maintenance Mechanics

Achievement Certificate Programs

Automotive Spray Painting

Machining Operation

Professional Office Systems

Small Business and Entrepreneurship

Certificate of Completion

Skill Building Program

Public Service Training and Police Academy

The WCC Public Service Training Program provides in-service training courses for employees 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 Criminal Justice program requirements in addition to the Academy are eligible for an Associate in Applied Science degree in Criminal Justice — Law Enforcement Certification.

Technical Education/ Construction Institute

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 the employer and employee to meet the requirements. Assistance is also provided, when requested, to coordinate activities with registering agencies such as the Department of Labor—Bureau of Apprenticeship and Training (BAT). The Trade-Related Instruction program is approved by both the Bureau of Apprenticeship and Training and the Michigan State Department of Education.

Current apprenticeship programs include:

Building Maintenance

Dairy Plant Maintenance Mechanic

Die Maker

Die Sinker

Die Tryout/Punch Finisher

Drafting Design

Equipment Repair Mechanics

Gage Design

Industrial Electrician

Industrial Hydraulics/Pneumatics

Industrial Plumber/Pipefitter

Industrial Service

Machine Builder/Repair

Machine Design

Machine Repair/Machinist

Machinist All Around

Mechanical Equipment

Metal Model Maker

Millwright

Mold Maker/Die Cast

Office Machine Repair

Packaging Mechanic

Plaster/Plastic

Powerhouse Repair

Precision Mill Operator/Boring Mill

Product Design

Prototype

Quality Control

Sewing Machine Repair

Sheet Metal Worker

Tool Design

Tool & Die Design

Tool & Die Maker

Tool Maker

Tool Maker/Gage

Tool Maker/Grinder

Tool Maker/Machinist

Welder/Fabricator

Wood Model Maker/Patternmaker

Employees-in-Training (E.I.T.)

Electrical

Inspector, Standard Tools

Instrument Repair/Electrical

Instrument Repair/Mechanical

Machine Operator

Machine Repair

Millwright

Painter/Glazier

Pipefitter

Pyrometer

Welder/Fabricator

Courses are also available for:

Management Personnel

Supervisor Certificate

Journeymen

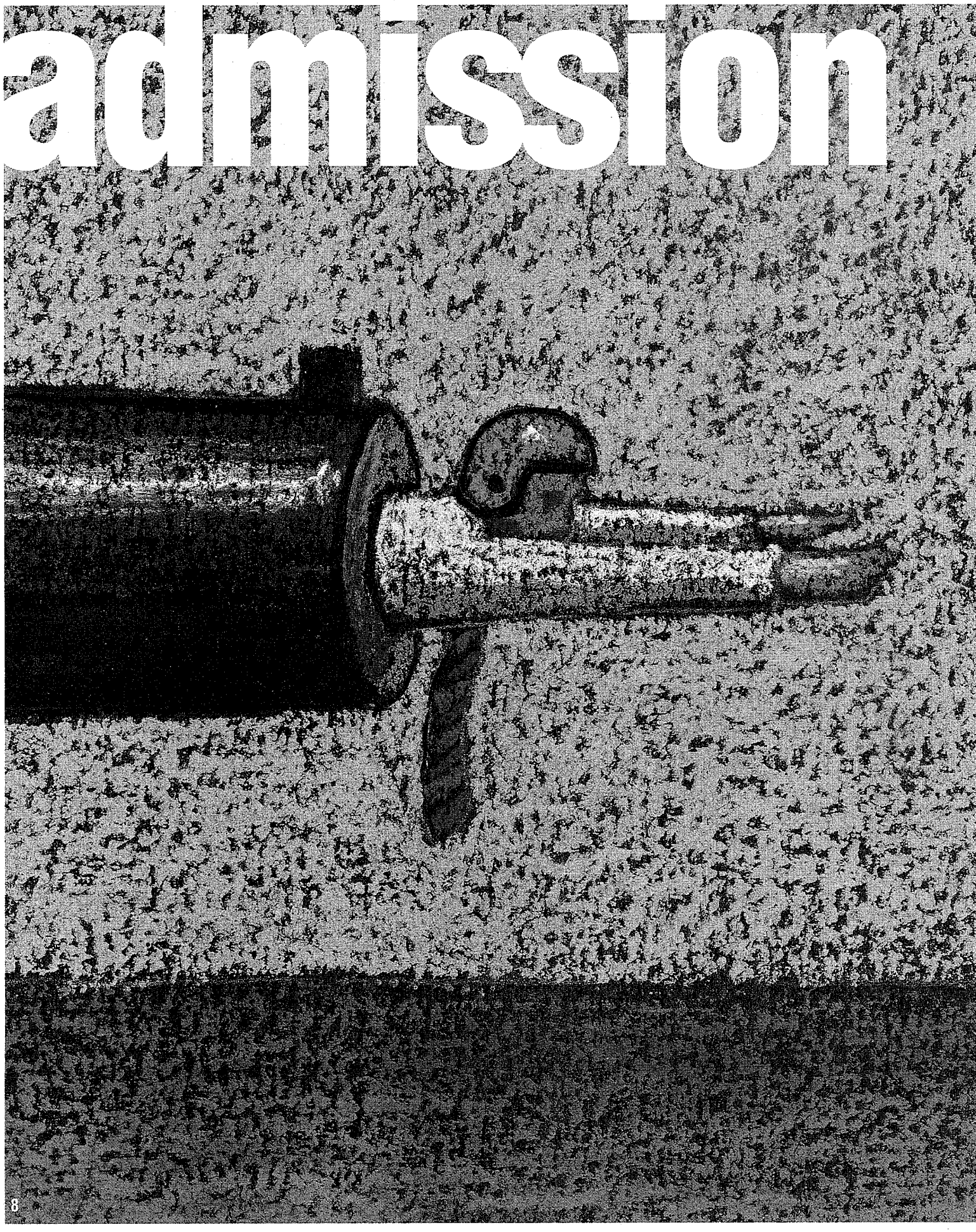
Tradesperson (without Certificate)

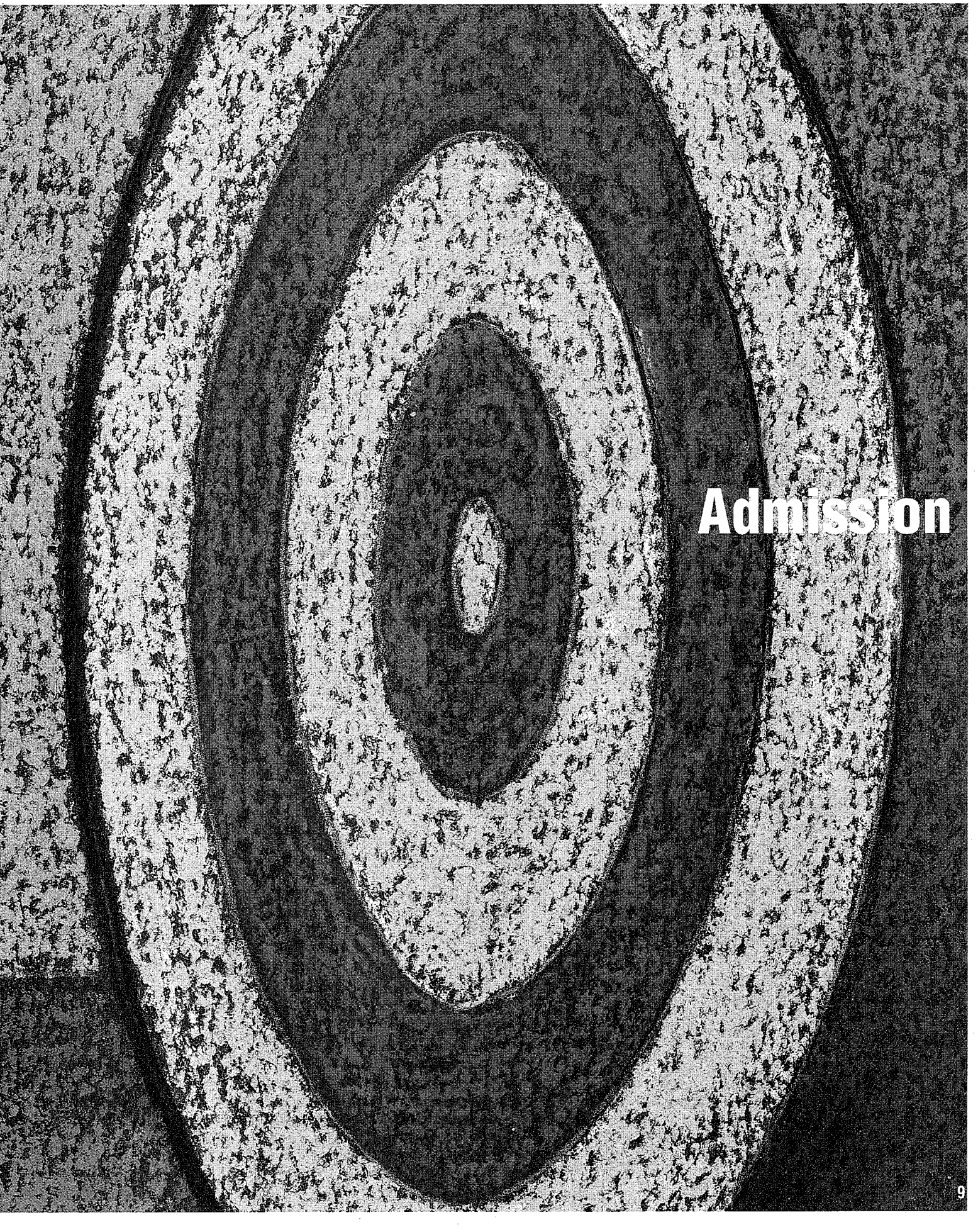
Trainees and Journeyman Upgraders

Pre-Apprentices

Other employees seeking advancement

admission





Admission

Admission

WCC is open to all individuals who can benefit from its educational and service programs. The focus is 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 academic, career, and personal 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. Students must submit verification of graduation from high school or achievement of a GED. However, students unable to provide this verification will not be excluded from enrolling. All new students are required to take an assessment and, depending on the results, may be required to take preparatory courses while they are taking courses in the regular curriculum. Under certain conditions, students may qualify for an exemption from the assessment (these exemptions are described on page 13). 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 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.

Program with Admission Criteria

Some Washtenaw Community College programs have prerequisite coursework 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 vice president for instruction and student services 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 legal residence is a foreign country.

Admission Procedures

New Students

All new students are required to complete an admissions application and pay the one-time, nonrefundable application fee. New students, regardless of experience or educational background, are urged to meet with a counselor or advisor to learn about opportunities the College can provide. Individual assessment for appropriate program planning and course selection is required for all new students.

Re-admission of Former Students

Former students who have not registered for classes at the college for one full year must reactivate their files at the Office Student Records by filling out a new application form. Former students of WCC who have paid the application fee previously, will not be assessed another fee. Students reactivating their files are encouraged to see a counselor or advisor prior to registering for classes. Individual assessment also may be recommended.

Dual Enrollment of High School Students

High school students may enroll in classes for college credit or for units to be counted toward the high school diploma for a maximum of six credit hours. 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 of other colleges and universities may attend WCC as guest students. This status is secured through completion of a Michigan Uniform Undergraduate Guest Application and payment of the application fee. This application can be obtained from the home institution and should be sent to the WCC Office of Admissions. A new guest application must be submitted each semester.

Admission of 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 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.

Admission Requirements for International Students (F-1 visa only; non-ESL)
International F-1 visa students may be admitted to Washtenaw Community College. Admission will be based on satisfactorily meeting the following requirements:

1. A completed WCC application for admission* and a $15 check or money order made payable to Washtenaw Community College to cover the **nonrefundable** application fee.

2. A notarized bank statement reflecting the student's ability to meet all tuition, fees, and living expenses while attending WCC. Contact the international student admission representative for the required amount in U.S. dollars by phone, (734) 973-3315, or by e-mail, fl@orchard.washtenaw.cc.mi.us

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 shown by a minimum score of 500 on the *Test Of English as a Foreign Language* (TOEFL), or 75 percent 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 Identification 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 the international student admissions representative.

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 placement test will be scheduled after arrival and prior to class registration.

For answers to specific questions about enrollment, contact the international student admissions representative either by phone at (734) 973-3315 or by e-mail (fl@orchard.washtenaw.cc.mi.us).

Students on an F-1 visa must enroll full-time (at least 12 credit hours per semester) at WCC.

In order to be eligible for re-enrollment in the following semester, the student must earn a passing grade of A, B, C, D, or S in 12 credit hours.

Admission Requirements for 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 are as follows: fill out an application for admission, submit your application with a copy of your green card (front and back), and also include a copy of your drivers' license or State of Michigan Identification.

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 drivers' 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 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 an ASSET assessment that must be completed before registering for classes.

2. International students other than F-1 visa holders 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 consists of the English 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 educational and cultural programs without tuition costs. However, these students must follow the general admission criteria of the college and pay the registration fee each semester.*

** Fees are subject to change by action of the Washtenaw Community College Board of Trustees.*

Health Occupation Students — Special Admission Requirements
Applicants to the health occupations (e.g. Nursing, Dental Assisting, Pharmacy Technology, Radiography, Respiratory Therapy, and Surgical Technology) 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. Students are required to provide verification of legal residency by submitting photocopies of one of the following documents to the Office of Admissions with their application: voter registration card, Secretary of State personal identification card, driver's license, valid vehicle registration, residencial property tax receipt, or valid and current lease agreement.
2. 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.
3. 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.
4. Students who are not residents of the district and are currently employed full-time 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.
5. Those students who are transferred to the county by the military must present appropriate documentation to qualify for immediate in-district residency.
6. 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.
7. 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 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 #4 under *Aspects of Residency* above).

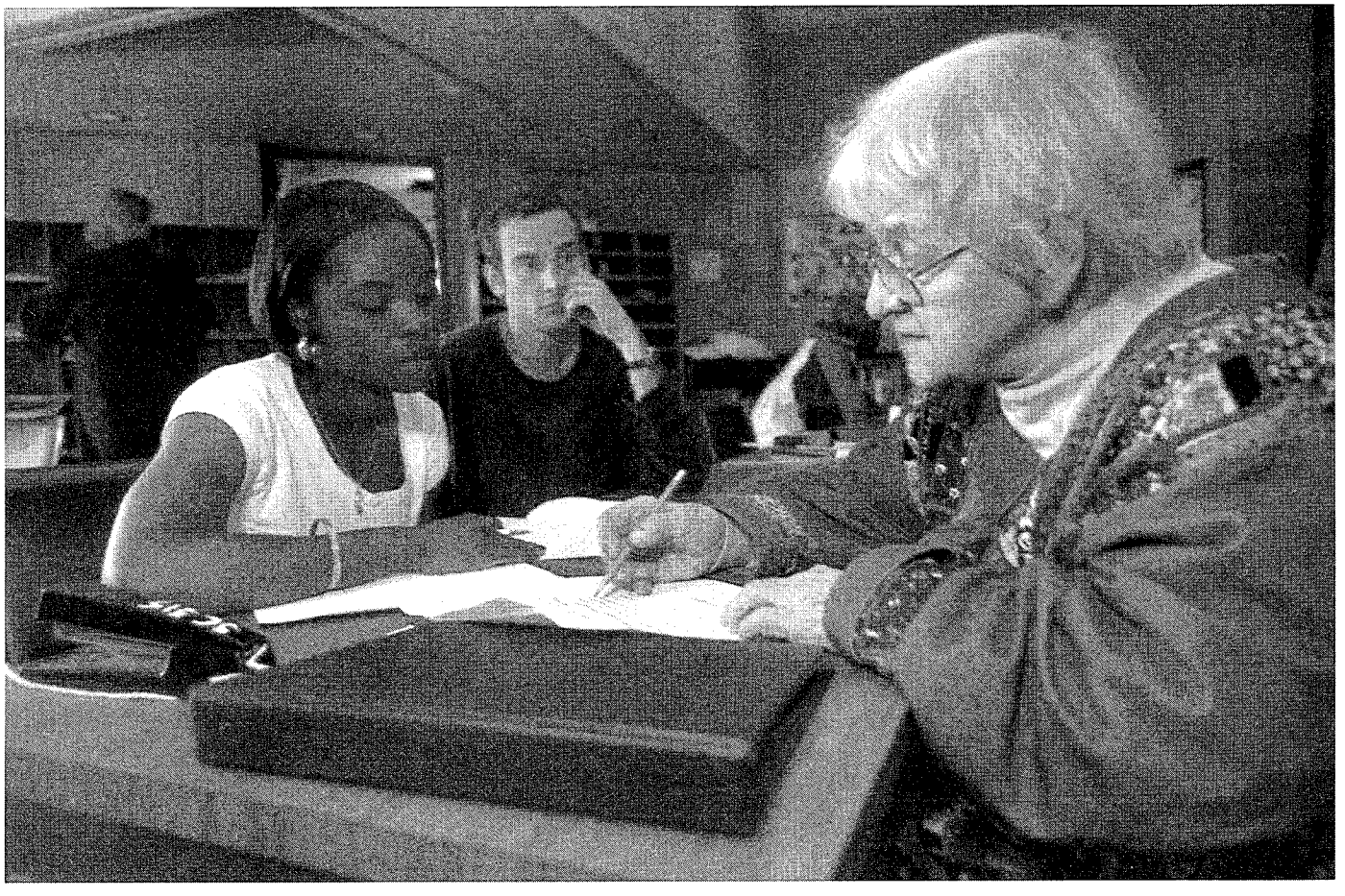
Required Student Orientation and Program Planning
Orientation/assessment sessions, scheduled prior to each semester, are required for new students. During these sessions, students complete an entry assessment which measures their English, math, and reading skills. Counselors and advisors then assist students in selecting and scheduling courses. Orientation sessions are scheduled at a variety of times to accommodate the busy schedules of prospective students. Exemptions from orientation are granted under the following circumstances only:

- Student has verified completion of a degree (an associate's degree or higher) from an English-speaking college or university (60 semester credits that are fully applicable toward a bachelor's degree will qualify).
- Student has both verified graduation from an English-speaking high school or achieved a GED and documented the completion of 20 or more semester credit hours (30 or more quarter hours) of college academic course work with a cumulative GPA of at least "C" (2.0).
- Student has completed the Asset assessment at a prior orientation and can produce a copy of the results.
- Student is enrolling only in non-credit courses or is auditing courses.
- Student has completed a guest student application approved by college personnel at the home institution, and verified graduation from an English-speaking high school or achievement of a GED, and is in good standing with and eligible to return to the home institution.
- Student is enrolling only in a distance learning course and has met the prerequisites, if any, for the given course.

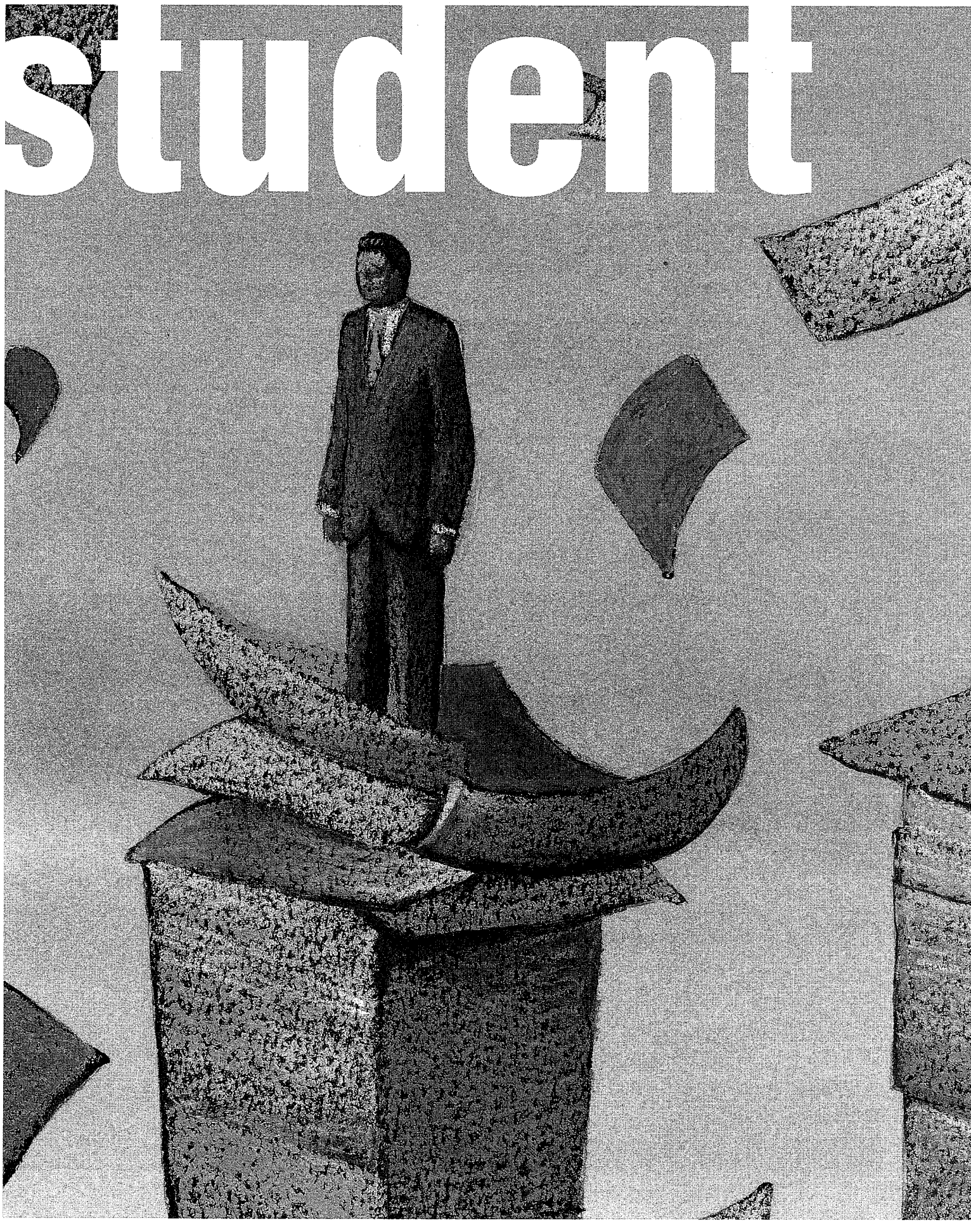
NOTE: Some health-related programs have an additional screening process.

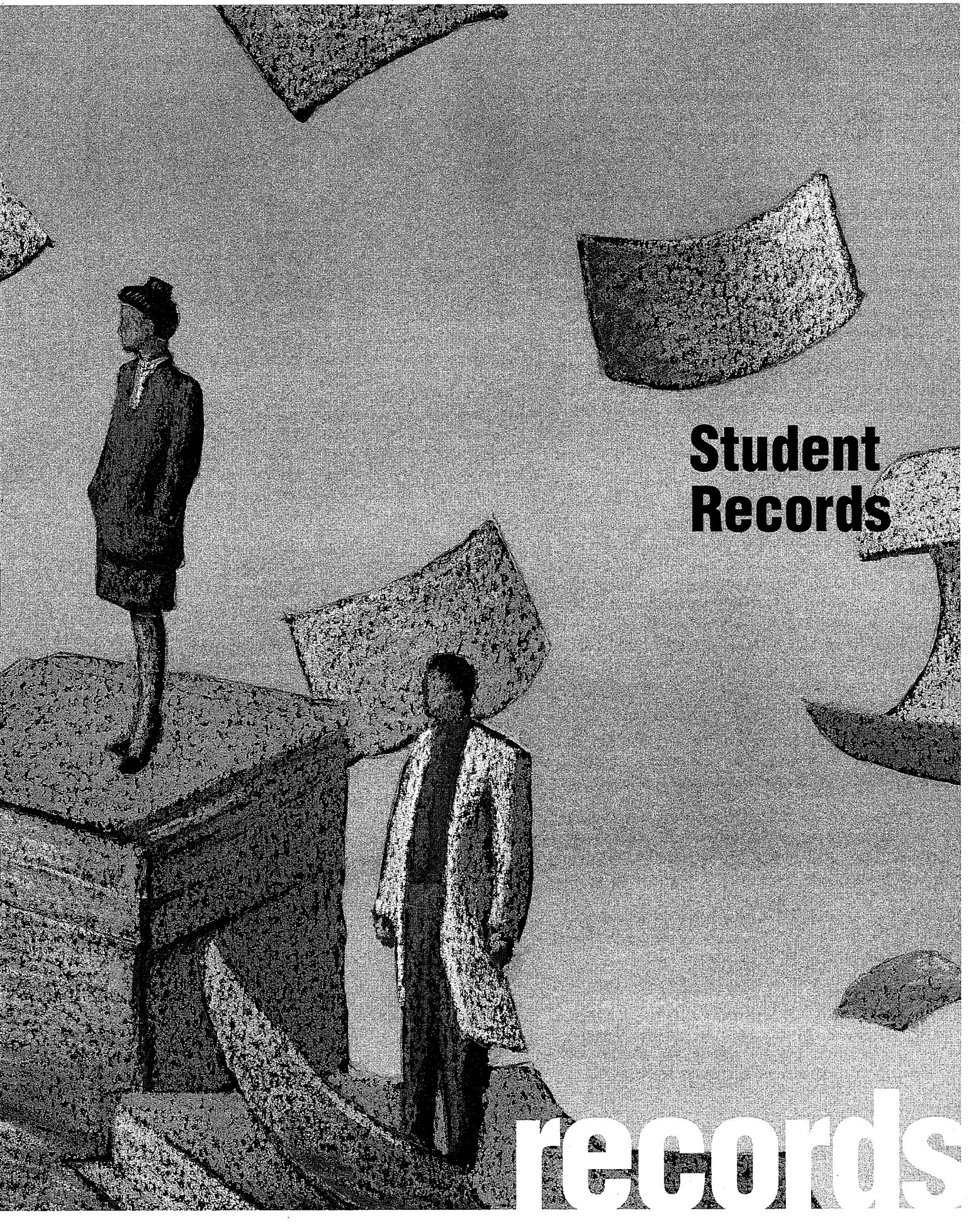
NOTE: Physically handicapped students who need readers or writers to help them take the ASSET assessment should contact Learning Support Services for assistance (973-3342).

NOTE: Foreign-born students who have not already taken and passed the TOEFL or MELAB test may be required to attend a special International Student Orientation, which includes an English placement test, instead of or prior to attending the College Orientation. This option is not available for F-1 student visa holders.



student




Student
Records
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 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 or faculty advisor. Students on an academic (GPA and/or ATB) or foreign student (ESL) hold must have their schedule approved by a counselor or advisor before registering for courses.

Adding and Dropping Courses

During the official add/drop period, a student may add or drop a class or change a section without an instructor's approval. An added course is accepted on a space-available basis during the official drop and add period. After the official add/drop period, students must have an instructor's signature for adding classes or changing sections. Students may not add a course after the refund period for the course. 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 adding courses must present a copy of their class schedule to the instructor as evidence of registration.

Drops are only accepted in the Office of Student Records up to the date (approximately two weeks before the end of the term) published in the class schedule for each semester. After this date, students must obtain approval of the instructor to drop. A student is not officially dropped from the class until an official Drop Card is processed in the Office of Student Records. Courses dropped after the 100% refund deadline will be listed on the student's transcript with a grade of "W."

Changing Sections

Students changing from one section to another of the same course must complete the process in the Office of Student Records. Students are added on a space available basis and instructor approval is required after the add/drop period.

Repeating a Course

Whenever a course is repeated on a credit basis, the last grade and credits earned replace the previous grade and credits

earned in computing the grade-point average. However, 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 refund period for a course (four weeks for a 15-week course).

Withdrawing from College

Students who withdraw from the college during the semester must initiate the withdrawal procedure in Office of Student Records.

In case of official voluntary withdrawal from the college, "W" grades are assigned to all courses if the withdrawal occurs after the 100per cent refund deadline. Semester tuition and fees are subject to the refund policy shown in the Financial Information section of this catalog.

Students who leave the college without obtaining an official withdrawal may be reported as having failed all courses. The withdrawal procedure does not take place automatically for students who leave the campus due to personal or family illness but must be initiated by writing the Office of Student Records. Students who leave the college without withdrawing properly or who withdraw after the refund period forfeit any tuition or deposits paid to the college and are liable for any deferred tuition payments.

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 their written 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 home address unless the student has a financial obligation to the College.

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 the 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

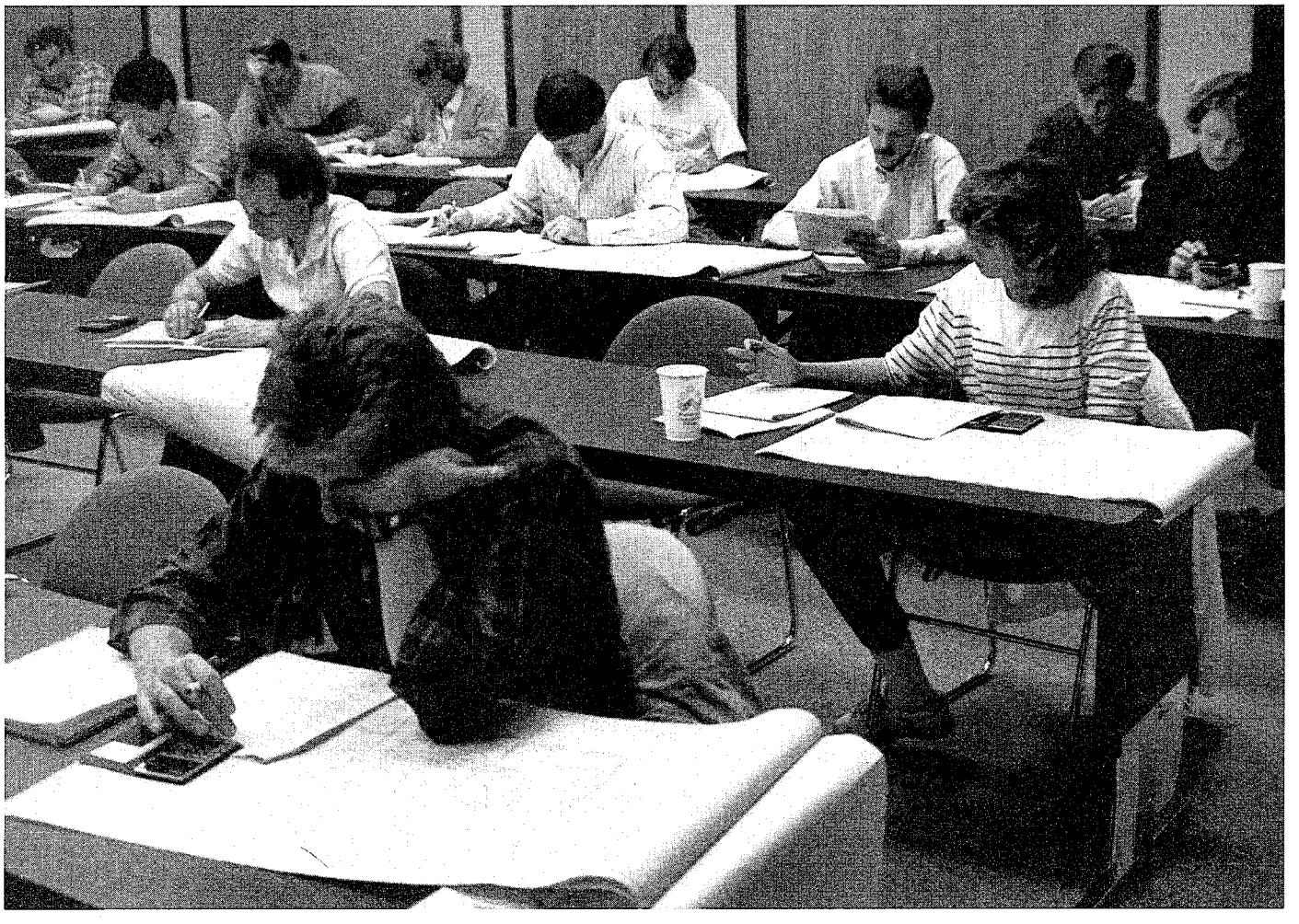
All previously enrolled veterans should report to the Veteran Services Technician prior to registering to ensure proper credit. Students must turn in a completed certification form after registering for classes every semester to ensure the continuance of their benefits.

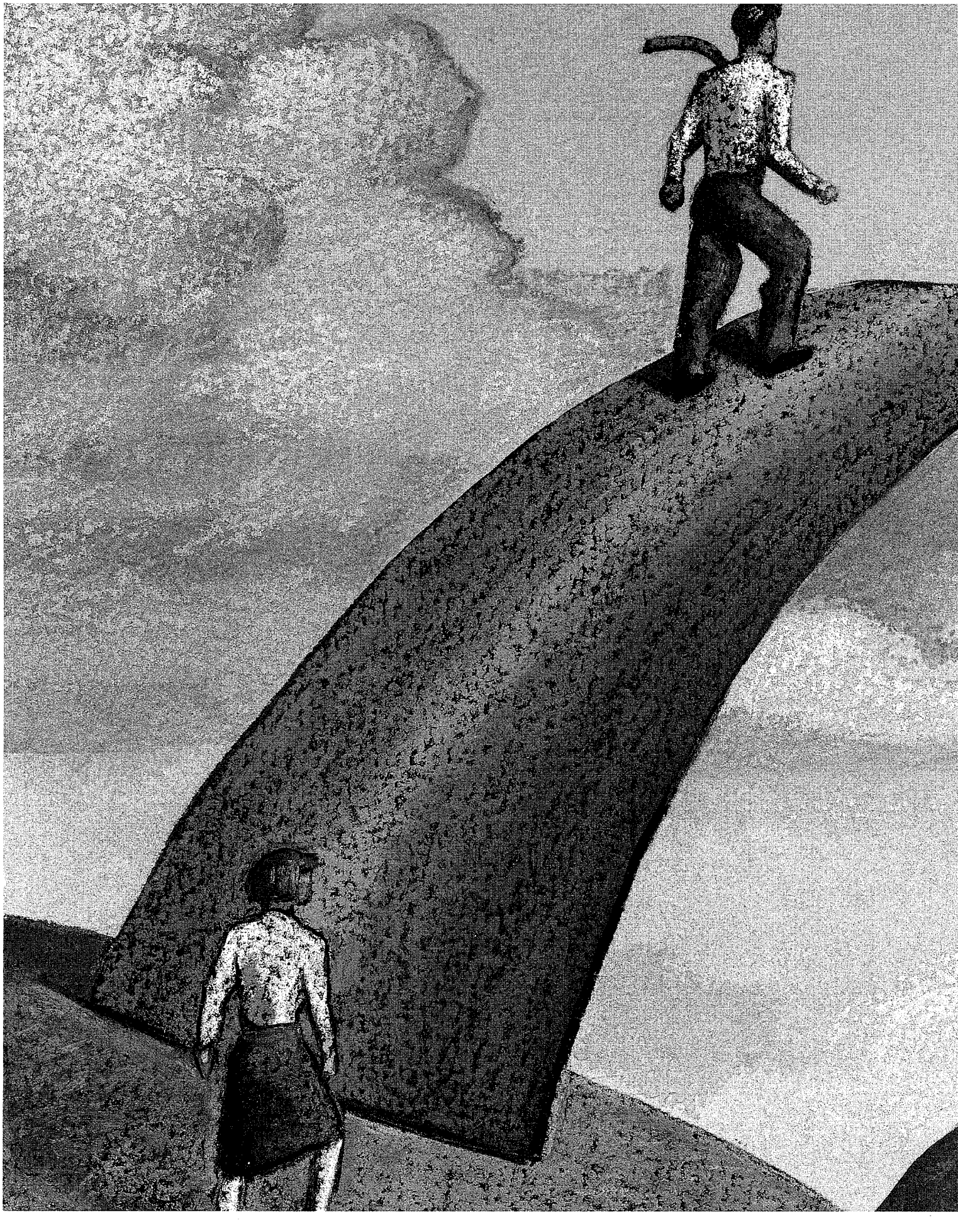
Credit for Formal Service School Experience

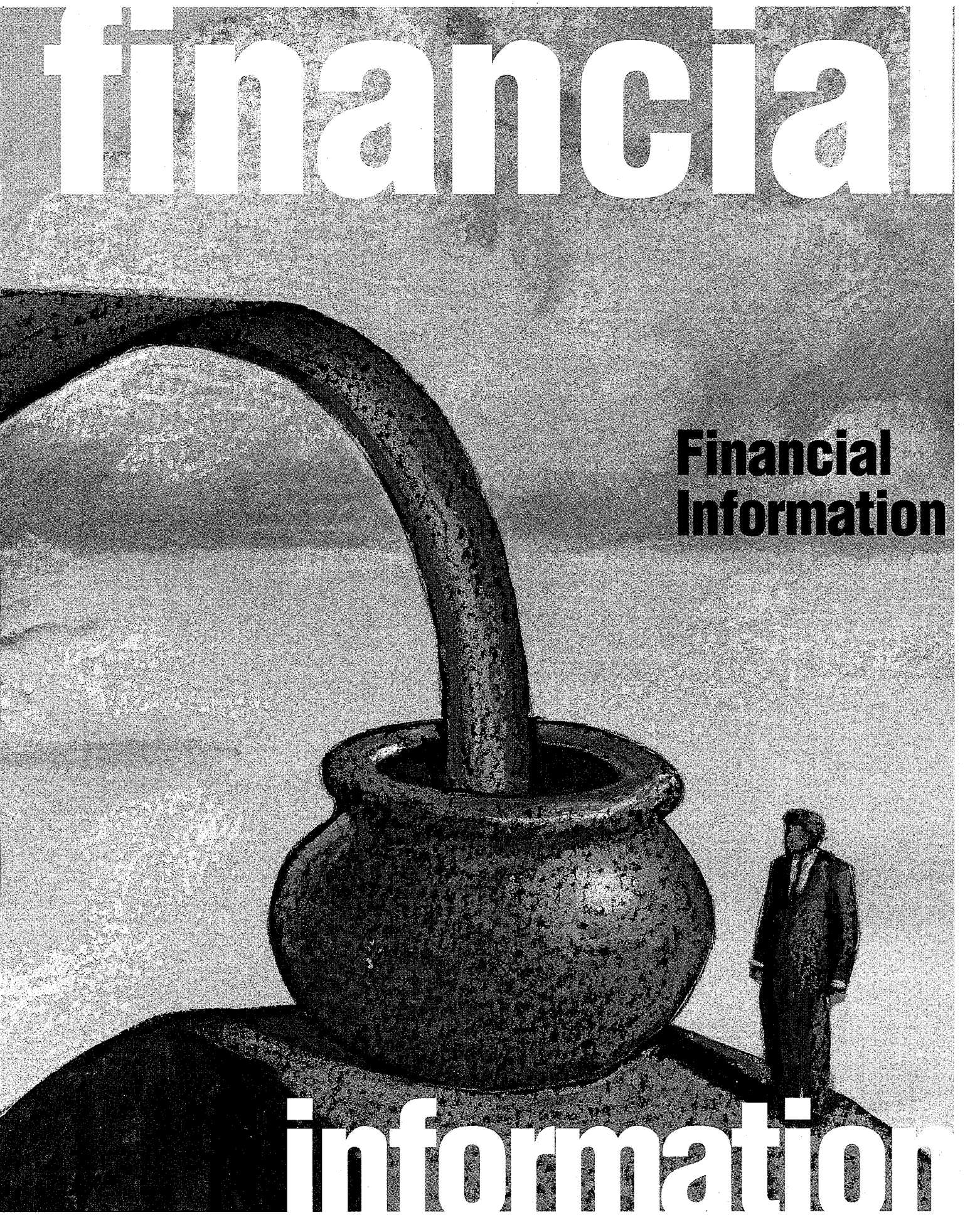
Credit is granted for formal service school training as recommended by the American Council on Education, through its Commission on Accreditation of Service School Experiences. For complete information contact the Veteran Services Technician in the Office of Student Records.

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
Financial
Information
information

Financial Information

Tuition*

Residents of the College District	$ 52.00	per credit hour
Non-Resident/In-State	$ 77.00	per credit hour
Non-Resident/Out-State	$ 98.00	per credit hour

Fees*

Application Fee (one-time only)	$ 15.00
Registration Fee (each semester)	$ 23.00
Late Registration Fee	$ 22.00
Instructional Technology Fee (per credit hour)	$ 4.00
Credit by Exam Fee (per credit hour)	$10.00
Deferred Tuition Loan Fee (processing fee)	$25.00
Books and Supplies	**

** 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 first 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

All refunds must be initiated by the student, including canceled classes and all residency changes. If classes are officially dropped, students are eligible for a refund of fees as follows:

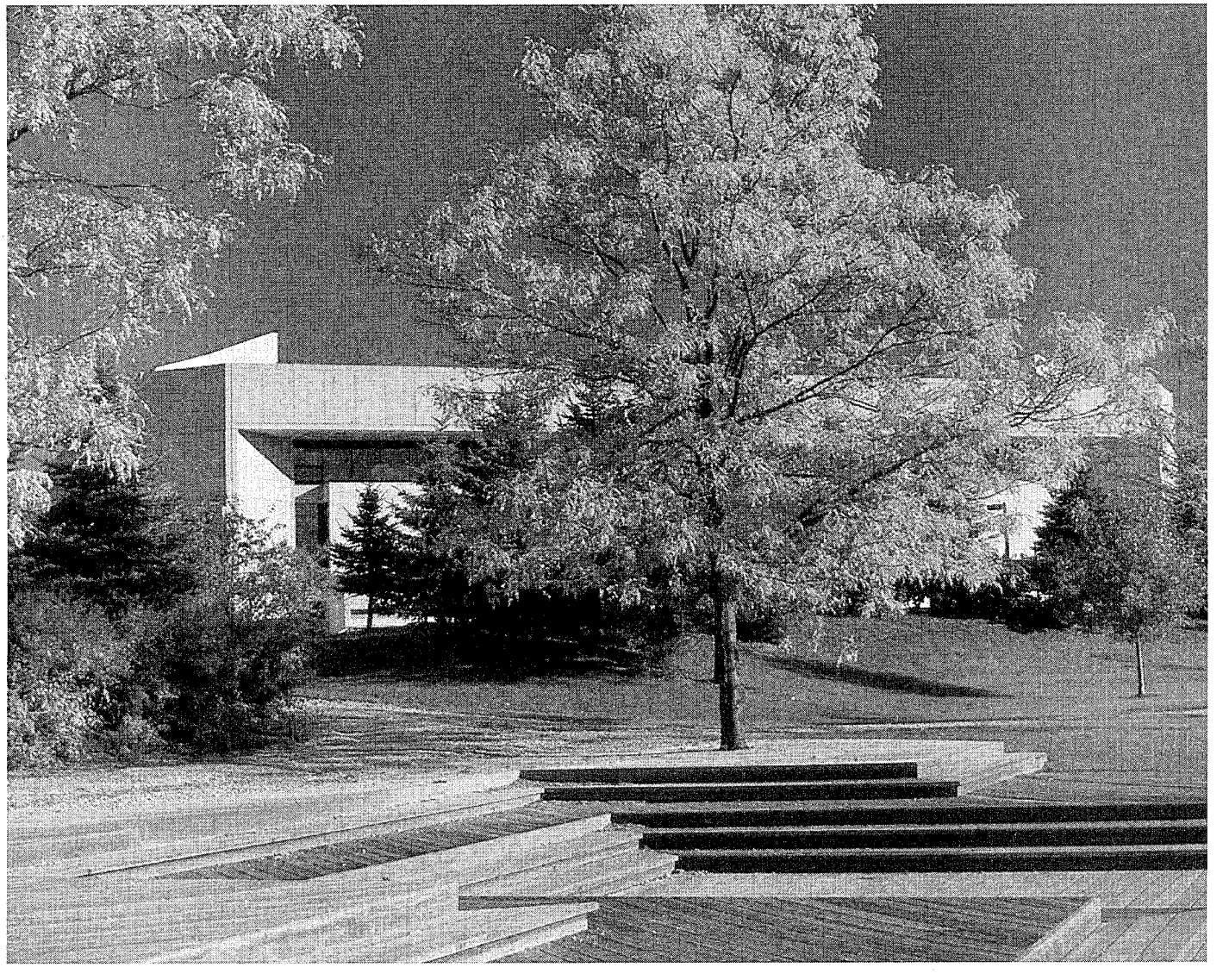
Courses lasting 12 or more weeks:

100% refund if an official drop is filed prior to or during the first five days in the semester.

75% refund if an official drop is filed during the next five days of the semester.

50% refund if an official drop is filed after the tenth day and before the twentieth day of the semester.

0% No refunds are issued for drops filed after the twentieth day of the semester.



Courses lasting 7 - 11 weeks:

100% refund if an official drop is filed prior to or during the first three days of the semester.

75% refund if an official drop is filed during the fourth or fifth day of the semester.

50% refund if an official drop is filed during the next five days of the semester.

0% No refunds are issued for drops filed after the second week of the semester.

All fees are non-refundable.

Courses lasting less than 7 weeks:
Refunds for these courses are on a prorated basis, as determined by the Director of Student Records.

Students dropping and adding after the official 100% refund deadline must pay the difference if they wish to add classes (classes added are charged at full tuition rate even though classes dropped may refund only 50%-75%, depending on the withdrawal date). There is no "difference" charge for drops and adds from canceled classes, or an instructor adjustment of students' schedules.

Upon written approval of the Director of Student Records, a full refund of all tuition may be given upon official withdrawal at any time during the first two-thirds of the semester in the following circumstances:

1. Induction of the student into the U.S. Armed Forces.
2. Death of a spouse, child, parent or legal guardian of a student.
3. Death of a student.
4. Verifiable error on the part of the College.
5. Verifiable incapacity, illness, or injury which prevents the student from returning to school for the remainder of the semester.

No refund is made if withdrawal occurs after two-thirds of the semester has transpired, regardless of circumstances. No refund shall be given for any other fees (such as application, registration, student, or late registration).

Financial Aid

WCC provides financial assistance to students in the form of scholarships, work-study employment, and loans. Several programs also have been developed to provide financial support to honor 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, second floor, Student Center Building or call (734) 973-3523.

Types
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 assessment (administered during new student orientation) 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 months 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 WCC Financial Aid Application must be completed in order to receive other applications.
2. 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.
3. 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.
4. 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. Stuedents who wish maximum comsideration 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 criteria of the Office of Financial Aid requires that all students receiving aid maintain at least a 2.0 grade point average and complete 75 percent of their semester credits. Students failing to meet this minimum requirement are placed on probation and allowed one additional semester to meet this requirement. Students who do not complete 75 percent of their courses with a 2.0 GPA again are terminated from financial aid. Students who have had financial aid terminated may still continue to register and attend classes using their own funds for payment. Students may re-apply for financial aid when their grades improve.

Academic Progress Policy for William D. Ford Federal Direct Stafford Loan recipients:

In order to continue to receive Stafford loans students:

1. Must have a cumulative grade point average of 2.00 and,
2. Must have maintained satisfactory academic progress at WCC and not be on financial aid probation and,
3. Must have completed the two terms prior to the beginning of the loan period with a minimum of 2.00 G.P.A. for each term and,
4. Must have completed at least 75 percent of the courses taken in the two terms mentioned in item three.

Financial Aid Refund Policy

Students who receive any Title IV funding as a first time student are entitled to a pro-rate 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

For students receiving aid for additional semesters, refunds will be issued according to the refund policy established by North Central Accreditation Agency and Washtenaw Community College.

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 and receive a check for books on the first day of class. The book check is for the remainder of their financial aid. Students who are approved after the start of a semester have their account credited and receive a check for the balance of their award within two weeks. The following funds are disbursed in this manner:

1. Federal Direct Stafford Loan
2. Federal Direct Unsubsidized Stafford Loan
3. Federal Plus Loan
4. Federal Pell Grant
5. Federal SEOG Grant
6. Scholarships
7. Student

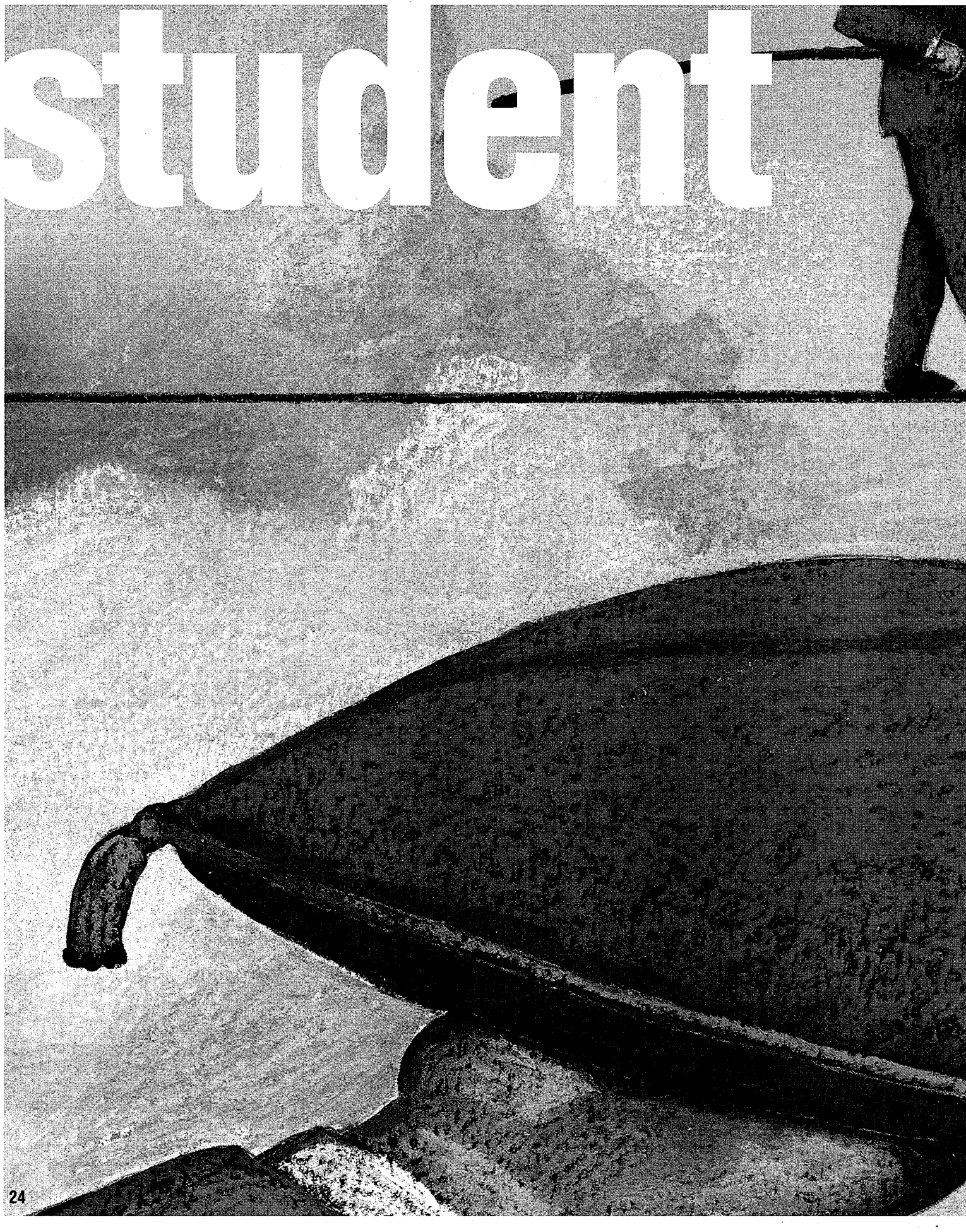
Stafford Loans and PLUS Loans are distributed to students as they are received from the lending institution. Students will be notified when funds have been applied to their account and when they can pick up their balance.

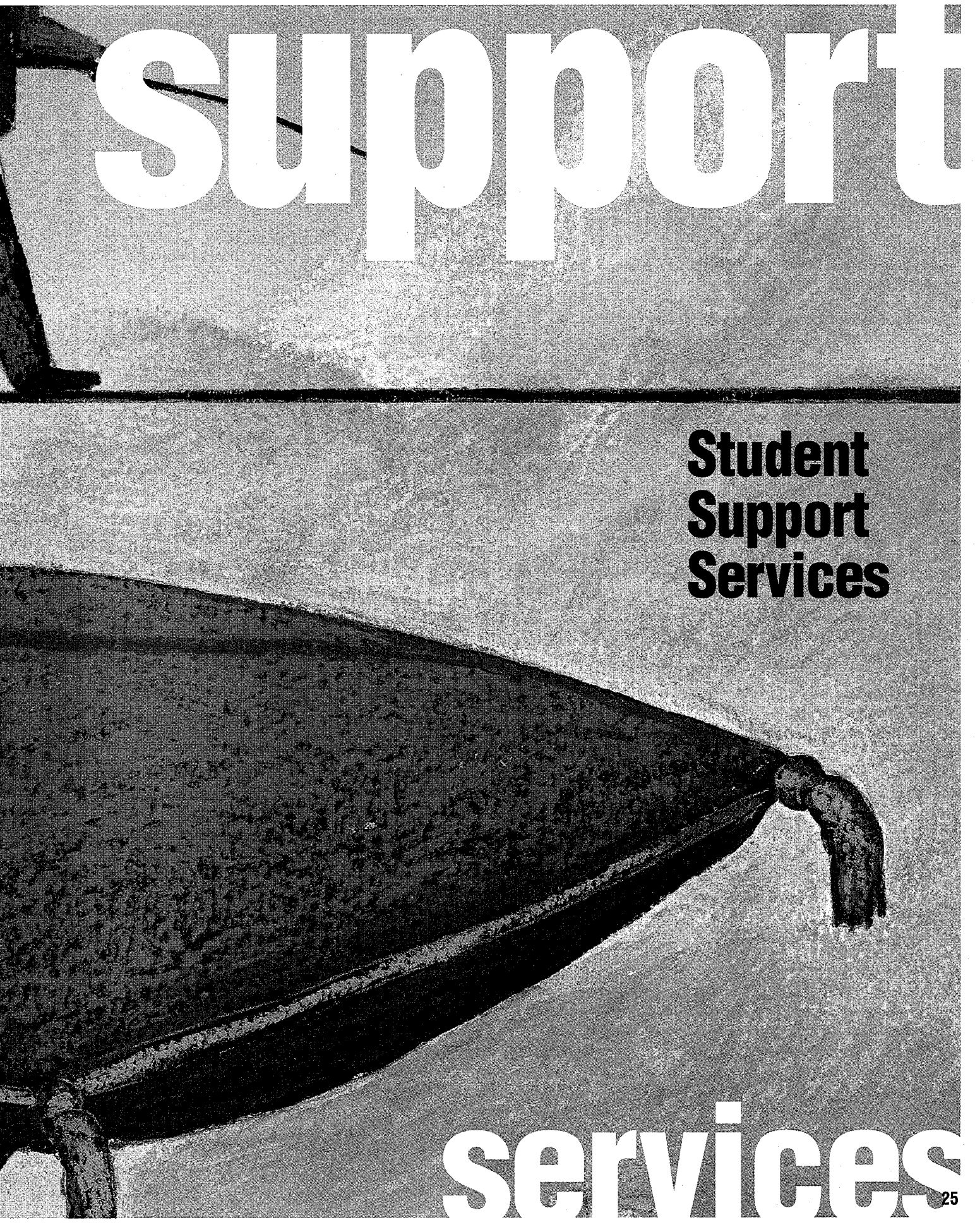
Student Employment on Campus

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 Office of Financial Aid for further details.

Occupational
Education
Building

student




support
Student
Support
Services
services

Student Support Services

Adult Resource Center

This special center offers support to adults entering or re-entering school; making course, program and career decisions; or desiring personal advising or counseling. The staff is especially sensitive to the concerns and needs of female, minority, and single-parent students. Through the center, the Department of Education offers tuition monies for students who meet certain qualifications such as re-entry into the labor market for homemakers required to work because of dissolution of marriage, upgrading of skills for the current labor market, and/or entry of women into careers traditionally held by men or by men into careers traditionally held by women.

The Adult Resource Center has information on qualifications for financial assistance. Assistance also may be available for books, tools, transportation, child care and other educational financial needs.

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

Adult Transitions

The Adult Transitions Program is a community outreach program offering job training, basic education, and personal development to Washtenaw County residents. It has three components: the skill building program, Job Skills Academy, and personal counseling. Students meet with counselors and work together to develop a personal action plan that includes job training. Workshops are also offered to students on searching for a job and other pertinent topics. The following describes the academic and occupational programs in Adult Transitions in more detail.

Skill Building Program

This is a short pre-college program that covers the areas of mathematics, reading, writing, and thinking skills, The program consists of an open-entry/open-exit model with an individualized student curriculum. Its purpose is to prepare students for one or more of the following 1) GED testing; 2) entrance into short-term job training programs; 3) entrance into college degree programs; and 4) entrance into the workforce with stronger basic skills. Certificates of completion will be awarded to students who complete the entire 100-hour cycle of instruction. This program is offered free of charge to qualified Washtenaw County residents.

Job Skills Academy

The academy provides short-term, intensive training in specific occupations to set a student on a career path. It serves students who are unemployed or underempolyed and are seeking opportunities that will enable them to become gainfully employed. Students receive scholarships or other forms of support based on financial need.

Short-term training programs designed to prepare students for entry-level employment or to give students a foundation to continue in a degree program are available. They include: Automotive Spray Painting, Machine Operation, and Professional Office Systems. These programs are described in more detail in the Program Listings Section of the catalog. Students interested in the Automotive Spray Painting program, see page 91 for a further description. For the Machine Operations program, see page 98. Students interested in the Professional Office Systems, a more detailed description is on page 67.

Two additional programs, Nursing Assistant and Child Development Associate Program are being developed and will be offered in the near future.

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

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

M-Th.....8:30 a.m. – 6:30 p.m.
F.....8:30 a.m. – 3:00 p.m.
S.....9:30 a.m. – 1:00 p.m.

Bookrush Hours

During registration and the start of each semester, the bookstore has extended evening and weekend hours which are posted at the bookstore and campus information.

Book Buyback

Students can sell back books any time during the semester.

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, computer software (at education prices), 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.

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 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 Worker 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.

Academic Advising

Counselors are available to facilitate the development of academic plans. Counselors 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 serving as advisors to students are located in the Counseling Center and other offices within the Student Services Division; they also can assist you with course selections, program and transfer requirements, and other related information.

Faculty members who are your classroom instructors can provide 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. Consult divisional offices for more specific information.

Students intending to transfer to a four-year college or university should contact the Counseling Office or the Placement and Transfer Center 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 Admission Officers (MACRAO) Agreement.

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 Placement and Transfer Center.

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 services to differently abled, economically disadvantaged and limited-English-speaking students. These services include tutors, interpreters for the deaf, readers for the blind, and other assistance to help students successfully complete their programs. In order to provide timely services, requests should be made three (3) weeks in advance. For additional information on eligibility for services, contact Learning Support Services (formerly Special Populations), located on the first floor of the Liberal Arts Building, Room 104. Hours of service are 9 a.m. – 10 p.m. Monday – Thursday and 9 a.m. – 3 p.m. on Friday. Tutoring is also available on Saturday and Sunday from 10 a.m. – 3 p.m. Call (734) 973-3342. If you are hearing-impaired, call the TTY number: (734) 973-3635.

Placement and Transfer Center

The college offers comprehensive services to assist students in career advising, career preparation, job placement and transfer at the Placement and Transfer Center located on the second floor of the Student Center Building.

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 Michigan Occupational Information System (MOIS), and an interactive computerized career guidance program (DISCOVER and Open Options).

The center maintains listings of job openings, including full and part-time jobs, on-campus opportunities, off-campus postings and placement for graduates. Staff 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 EMU Transfer Office is located in the Placement and Transfer Center. Eastern Michigan University staff are available during scheduled hours to provide information and answer questions. The CLIMB program for students transferring to EMU is located here also.

Student Assembly

The Student Assembly consists of 35 to 40 student members who represent the various constituencies of WCC students. Membership is voluntary and coordinates student involvement in the following areas: 1) Governance: participation in the college-wide governance structure system; 2) Student Activities: the planning and implementation of events such as dances, food drives, and concerts; 3) Communication: the generation of all internal and external assembly communications and public relations activities; and 4) Budget: maintenance of sssembly budget records, advisement of the sssembly steering committee on budget requests, and recommendation to the college administration of annual budget needs for student activities. The coordinators of student activities are the staff advisors for the assembly.

Student Activities

Many groups and clubs are active on campus. Students participate in these organizations to meet other students with similar interests, to develop leadership skills, and to have fun. Currently active groups and clubs include:

A.A.S.A. (African-American Student Association)
Advisor: Iota Frye, 973-3565 (SC 227)
Helps to provide awareness and sensitivity to African-American issues and concerns in the community.

Access Network
Advisor: Marjorie Cash, 973-3342 (SC 141)
Provides a social and supportive environment for differently-abled students at WCC.

A.D.A.P.T. (Alcohol and other Drug Awareness and Prevention Training)
Advisor: David Beaumont, 973-3397 (SC 227)
A peer support group that focuses on drug prevention through education.

Alcoholics Anonymous
Advisor: David Beaumont, 973-3397 (SC 227)
A self-help group for alcohol-dependent students.

Alliance for Minority Scholars
Advisor: Deborah Coles, 973-3730 (SC 227)
Support group for Hispanic, African-American, and Native American students transferring to the University of Michigan.

Art Club
Advisor: Frederick Horowitz, 973-3347 (LA 300)
A support group for those interested in art.

Business Professionals of America
Advisor: Dosye Thompson, 973-5111 (BE 237)
A nationally-competitive group that emphasizes business procedures and processes.

Criminal Justice Club
Advisor: Hank Townsend, 973-3671 (ML 106)
A peer support group for those individuals interested in the criminal justice field.

Forensics
Advisor: Bonnie Tew, 677-5136 (LA 300)

A student group participating in public speaking and oral interpretation competitions on regional, state, and national levels. Students also exercise skills through public presentations for the college and surrounding community.

Gay, Lesbian , Bi-Sexual & Transgendered Student Support Group
Advisor: Peggy Holtzman, 973-3690 (SC 227E)A peer support group for gay, lesbian, bi-sexual and transgendered students (GLBT) that focuses on education and awareness of GLBT issues (open to all staff and students).

Geology Club
Advisor: Dave Thomas, 973-3582 (LA 200)A group to promote the science of geology through field trips, conferences, seminars, projects and speakers.

Hispanic Student Association
Advisor: Cecilia Paas, 677-5128 (SC 227)
A support group that focuses on Hispanic issues.

H.O.P.E.S. (Health Occupations Peer Education Support)
Advisors: Brenda Webster, 973-3614 (OE 102 U)
Vivian Murphy, 973-3457 (OE 102 X)
A student group that offers peer support to under-represented (including minority and at-risk) students who are working towards or are interested in careers in health care.

Kappa Omega Electricity/Electronics
Advisor: Arlene Paup, 973-3604 (TI 21X)
A peer support group for individuals interested in the electronic systems industry.

MACRO (Mi Amiga Computer Resource Organization)
Advisor: Charles Finkbeiner, 973-3389 (TI 118)
A user support group for those individuals interested in the Amiga computer system.

Native American Student Association
Advisor: Cecilia Paas, 677-5128 (SC 227)
A support group that focuses on Native American issues.

Phi Theta Kappa
Advisor: Gregg Heidebrink, 973-3367 (BE 235)
International honors society that promotes scholarship and community service.

Radiography
Advisor: Jerry Baker, 973-3336 (OE 102 0)
The Radiography Club is composed of first and second year radiography students. Throughout the year this group is actively involved in a number of activities that promote learning and professional development in the field of radiography. The club members sponsor a series of fund raising activities to collect funds to support state and national competition events and field trips.

Rainbow Orientation Committee
Advisor: Deborah Coles, 973-3730 (SC 227)
An open house activity held each semester to advise students of available resources and support services.

Respiratory Therapy
Advisor: Mimi Norwood, 973-3331 (OE 102 DD)
A group to promote campus awareness of the respiratory therapy profession and provide an avenue to supply information about respiratory therapy.

S.I.F.E. (Students in Free Enterprise)
Advisor: Steven Ennes, 973-3388 (BE 202)
A national competitive group that emphasizes business marketing strategies and procedures.

Student Advisory Council
Advisor: David Beaumont, 973-3397 (SC 227)
The managing body of the Student Assembly where student concerns are systematically gathered, processed, and disseminated to the appropriate college communities.

Student Chapter of Data Processing Management Association
Advisor: Usha Jindal, 973-3603 (BE 206)
A peer group for those individuals interested in computer information systems.

Warriors for Christ
Advisor: Diane DeMerrill, 973-3691 (SC 227)
A Christian prayer and support group.

W.C.C.I.S.A. (WCC International Students Association)
Advisor: Cecilia Paas, 677-5128 (SC 227)
A peer support group for individuals from all nations and cultures.

Students also have the opportunity to contribute to or be involved in the production of two major campus publications: *Northern Spies* is a yearly publication that includes poetry, short stories, essays, plays, and journal selections written by former and current WCC students through the English/Writing program; and *Time Out,* which is designed specifically for students and includes dedicated space for news items and stories written by students.

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 secured from the Office of Student Services.

Student Complaint Procedure
Students having complaints against faculty, staff, or administrative offices should first confer with the instructor, staff member, or administrator in an effort to resolve the issue informally. Issues that are unresolved at the informal stage are referred by the student, in writing, to the respective division dean or the vice president of instruction and student services who will attempt to mediate a resolution to the problem. Issues unresolved by the dean also may be referred to the dean of student services, who will continue to mediate a resolution. If the problem is still unresolved, the student may initiate a final appeal to the vice president for instruction and student services for complaints regarding academic matters. For complaints regarding non-academic matters, students should contact the dean of student services for a written copy of several procedural options that are available to students. A full description of the college policy on student rights and responsibilities, which includes the student complaint procedure as well as the student disciplinary procedure, can be obtained from the Office of Student Services. (Also see Student Rights and Responsibilities above.)

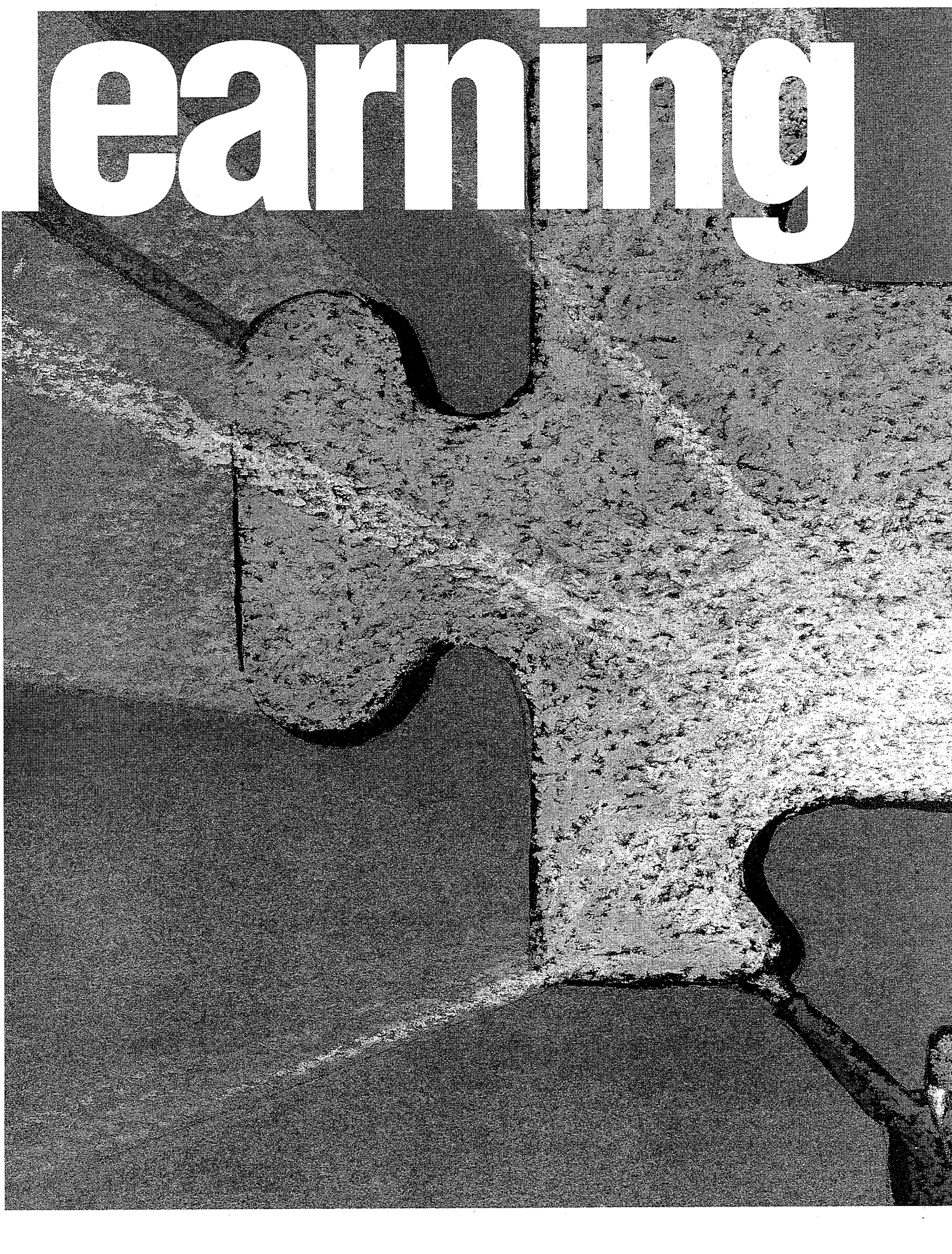
Substance Abuse

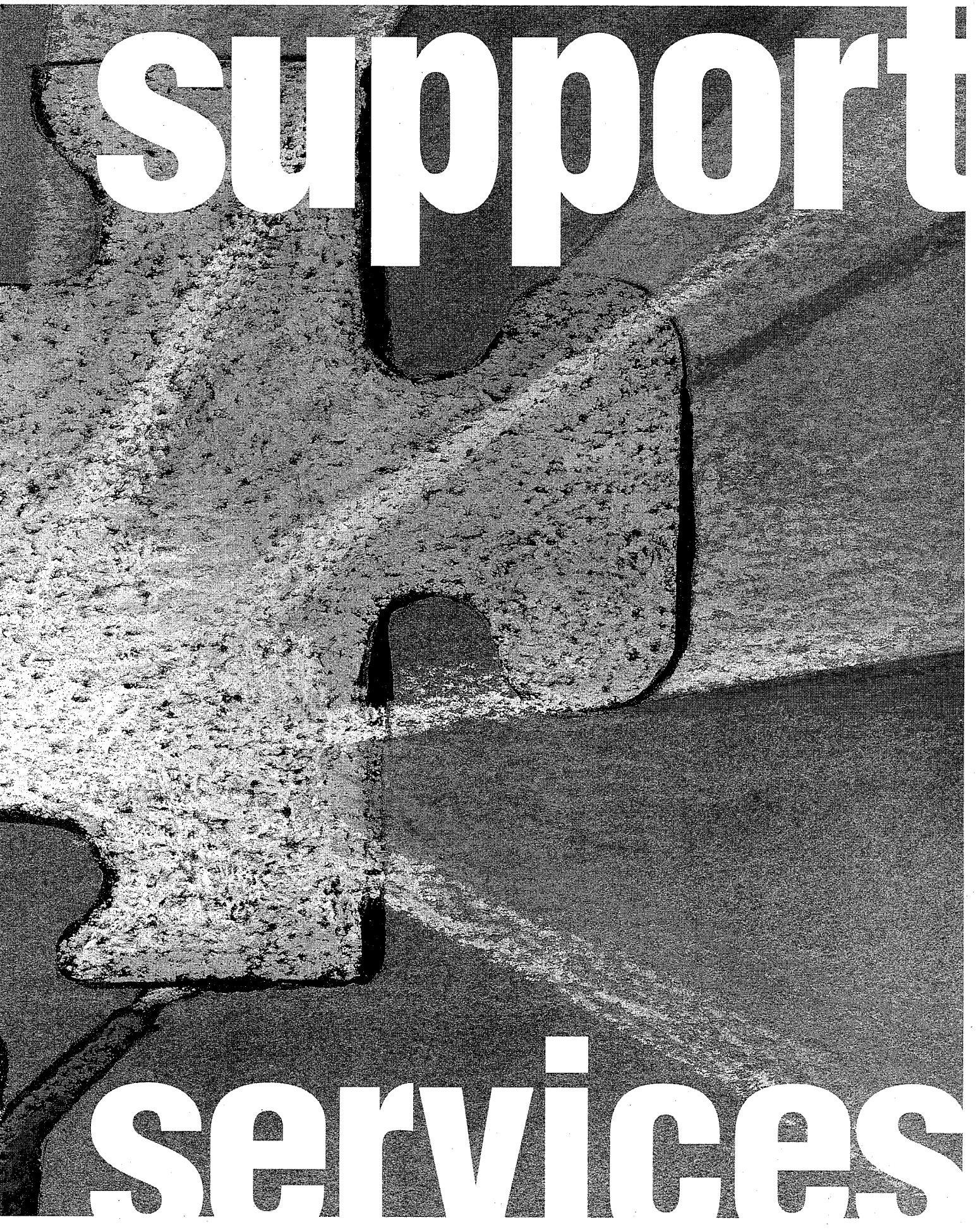
Alcohol and Drug Policy
The College has adopted the following position, consistent with requirements of the new federal drug-free campus regulation and with federal, state and local law, with respect to drug use on campus. All students, employees, and visitors are specifically forbidden to use, possess, or distribute alcoholic beverages or illegal drugs, or to be under the influence of 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.

Drug and Substance Abuse Prevention
Washtenaw Community College offers special services to increase student awareness of the effects of alcohol and other drugs. The Divison of Student Services has organized ADAPT (Alcohol and other Drug Awareness and Prevention Training) to provide information regarding the consequences to health, safety, family, finances, school, and employment that can result from alcohol and other drug use. Information is available through printed literature, video tapes, counseling, crisis intervention, referral for treatment, prevention education, support groups and services, and peer educators. For more information on this or other prevention programs, call (734) 677-5243.

Student Assistance Services
Washtenaw Community College is committed to providing short-term help and referral services for students with drug problems. If students feel the need to discuss their situation, they are encouraged to call (734) 677-52439 during office hours (8 a.m. to 5 p.m.) to make an appointment. Of course, all telephone and in-person transactions will be conducted with confidentiality.

earning




support
services

Learning Support Resources

Learning Resource Center

The Learning Resource Center (LRC) is located on the third floor of the Student Center Building. The LRC is an integral part of the total WCC learning environment and offers library, audio-visual and computing services to students, faculty, and staff.

The LRC is an active participant in the instructional and research programs of the College. It seeks to instruct students in the effective and efficient use of the library, and also encourages students to develop the habit of self-education so that books and other library materials may contribute to their intellectual development in future years.

To this end, the LRC provides the use of more than 66,000 books, 600 magazines, and 20 newspapers. Micro-publications, career materials, corporate annual reports, and pamphlet collections also are available. A growing collection of media software such as audio and video tapes, films, recordings, slides, video disks, and microcomputer programs is used on equipment in the LRC or in College classrooms.

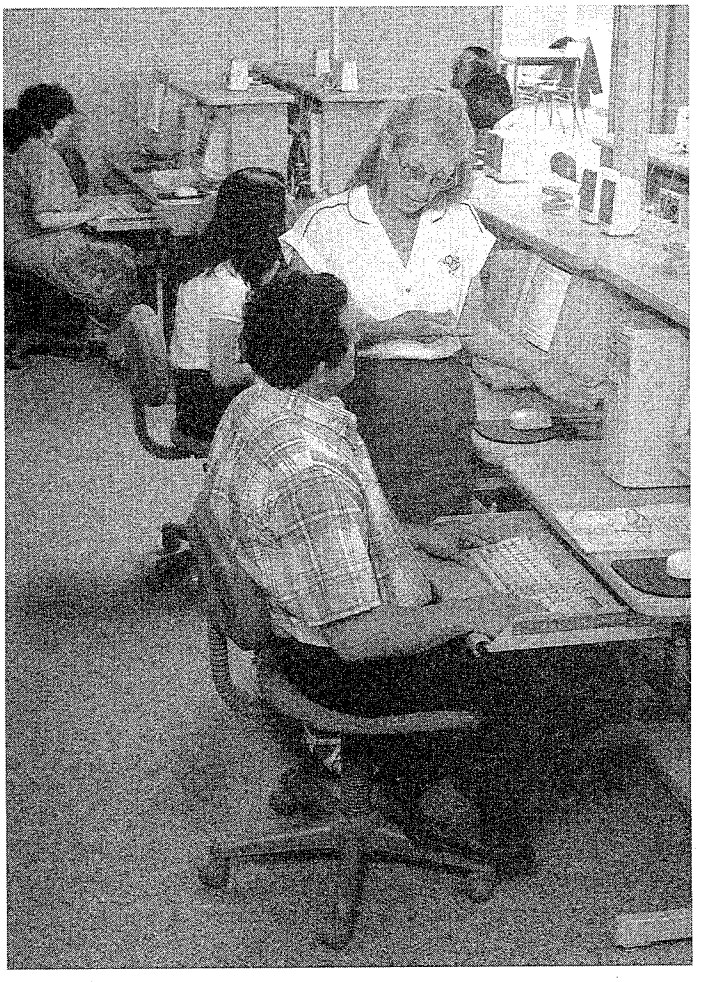
Librarians and faculty members select the best of retrospective and current materials to respond to students' curricular needs and provide accurate, up-to-date information and varying viewpoints on subjects and issues. To help students use the LRC, the librarians provide group instruction and assist in independent study activities. Students may request to join a library 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 Professional Collection, a small collection of books and ERIC documents on higher education topics, is developed and maintained for faculty use. The LRC actively participates in OCLC and other inter-library loan programs to provide other libraries' resources to faculty and students.

The LRC facility includes small seminar rooms, traditional study tables, informal lounge seating, and carrels specially equipped for the use of tapes, slides, and other audiovisual materials. The College archives, documents, and records of WCC history are also located in the LRC.

Library cards are available to all currently enrolled students, WCC faculty and staff, former WCC students, and residents of Washtenaw County who are 18 years of age or older. An automated circulation system and online catalog provide efficient, accurate information on all library materials. Photocopy services and equipment for printing microforms are available.

The LRC is open during weekday, evening, and weekend hours as posted each semester.



Learning Technology

The Learning Technologies Department (LTD) of the Learning Resource Center maintains instructional hardware and software for classroom use on campus and at regional sites. In addition, the LTD provides a variety of production techniques to accommodate college requests for signs, transparencies, slides, audio tapes and video programs. The LTD prepares non-broadcast, educational videotapes that support classroom instruction and also provides off-air taping and teleconferencing services to faculty and staff.

The Multimedia Development Office in the LRC provides technical assistance to faculty who wish to incorporate electronic presentations into their course plans. Staff assist instructors with online tutorials, video instruction, presentation and authoring software, and analog-to-digital conversions. Additionally, multimedia design, technical consultations, maintenance, and support are provided to all instructional divisions which utilize multimedia-classroom hardware and software.

The LRC provides a range of sound, light, and media services to community groups and other users of WCC auditoriums, lecture halls, and conference environments.

The LRC support the telecourse instructional program by providing tapes of the telecourses for loan or viewing in the center.

Computer Labs

A microcomputer lab housing microcomputers for use by students is located in the Learning Resource Center. Microcomputer lab staff provide assistance to users in the operation of hardware and software. A collection of computer software is cataloged and available for use in the lab. Software supporting instruction is housed in the Reserve collection and is located, with the cataloged software, at the circulation counter in the LRC. The microcomputer lab is maintained by the Business Education Division and is open for operation during regular LRC hours.

In addition, TI 108 is maintained as an open lab for students who have been given a user code by their instructor. This room contains IBM-compatible microcomputers for use in various kinds of coursework.

There also are specialized computer labs for use by particular units in several locations on campus. At the present time these include:

BE 272 ..... Computer Instruction
BE 274 ..... Accounting
BE 276, 280, 282 ..... Business Office Systems
OE 124 ..... Graphic Design Technology
OE 150 ..... Health Careers
SC 315 ..... English/Writing
TI 102, 104 ..... Graphic Design Technology
TI 110, 112, 114 ..... Computer Instruction
TI 127A ..... Industrial Technology
TI 223, 225, 227 ..... Industrial Drafting

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) 973-3647.

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, 151, 152, 163, 165, 169A, 169B and 177). 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 courses 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 103) is a facility for the convenience of students, to provide flexibility and reduce the stress of test-taking. Tests for TV 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 SC 315.)

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

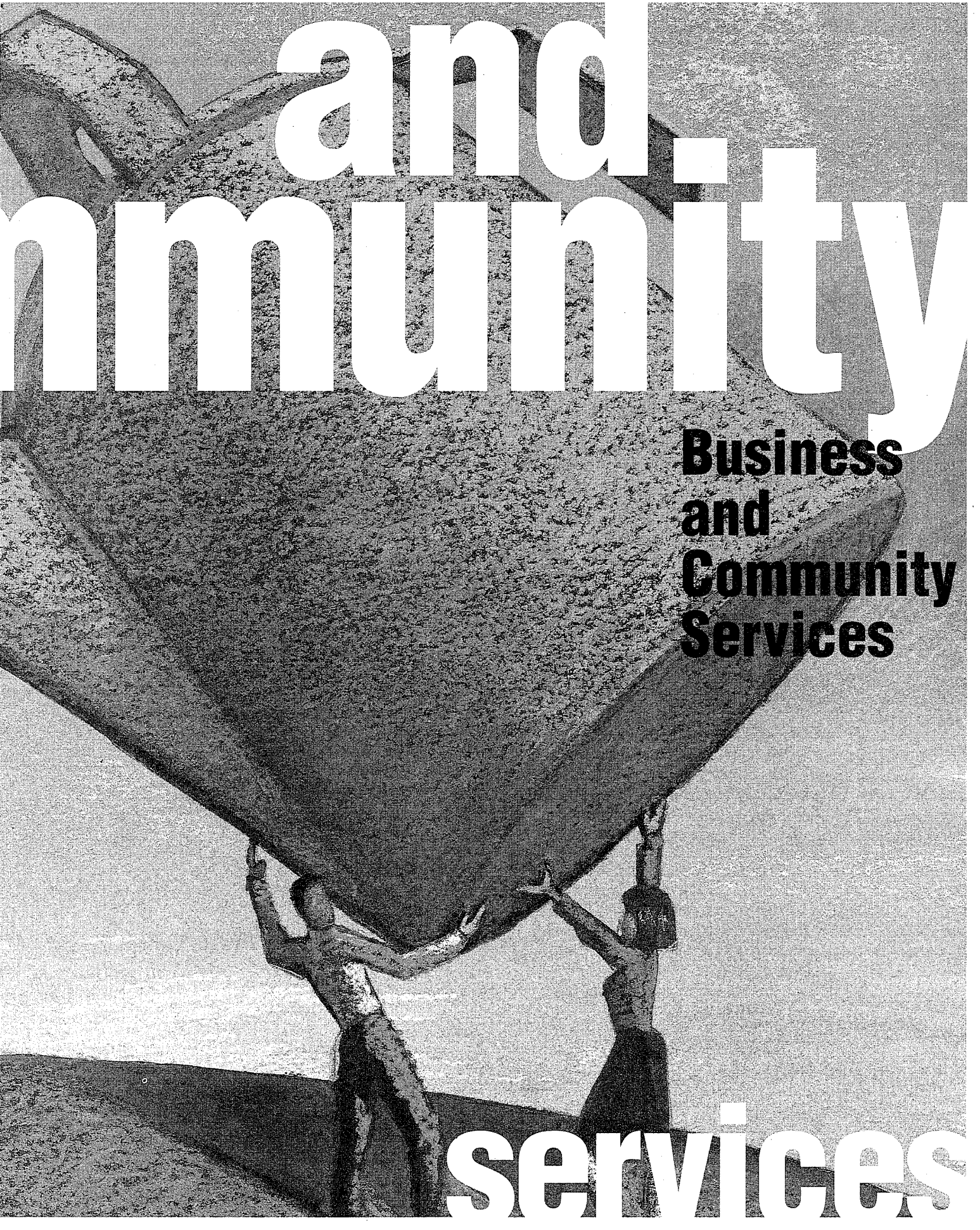
Spring

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
Sunday ..... Closed

business
con


and
mmunity
Business
and
Community
Services
services

Business and Community Services

Service to Targeted Populations

Noncredit Seminars, Short Courses, and Workshops

Washtenaw Community College, through its Division of Community and Business Relations (CBR), extends educational resources and facilities to the community by offering non-credit programs; emeritus programs; customized training programs; conference services; and services through the regional centers in Chelsea, Saline, Ypsilanti, and Brighton.

A broad spectrum of noncredit seminars, short courses, and workshops is offered to the public throughout the year through the Department of Business and Community Services. The noncredit program areas offered currently include:

- Business and professional development offerings
- Computer and other technology offerings
- Health care training/retraining offerings
- Lifelong education offerings (e.g., personal development, community development, life skills development, cultural development.)

These classes are offered at the main campus as well as the regional centers. For details and locations please call (734) 677-5016 and request a copy of our class schedule.

Institute for Workforce Development

The Institute for Workforce Development coordinates education and training to business, labor, and government in Washtenaw County. This educational experience is designed to help the county and its citizens to be globally competitive and economically viable.

In this arena, the Institute for Workforce Development extends the program offerings of the College beyond the traditional associates degree curriculum by providing customized training, 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.

Regional Centers/Extension Program

WCC offers a variety of credit courses in various regions throughout its Washtenaw/Livingston County service area at convenient locations and times. This extension program is coordinated and managed through a network of regional centers:

The Western Regional Center (734-475-5935) is located in Chelsea. Classes are held at the Chelsea and Dexter High School buildings, and at the Western Regional Center.

The Southern Regional Center (734-429-8153) is located in Saline. Classes are held at the Saline High School and the Southern Regional Center.

The Eastern Regional Center (734-480-9950) is located in Ypsilanti. Classes are held in the Harriet Commerce Center and frequently at Willow Run High School.

The Northern Regional Center (810-229-1419) is located in Brighton. Classes are held at Brighton, Hartland and Pinckney School District buildings.

Classes are also held at the Ann Arbor "Y" and Briarwood Mall in Ann Arbor.

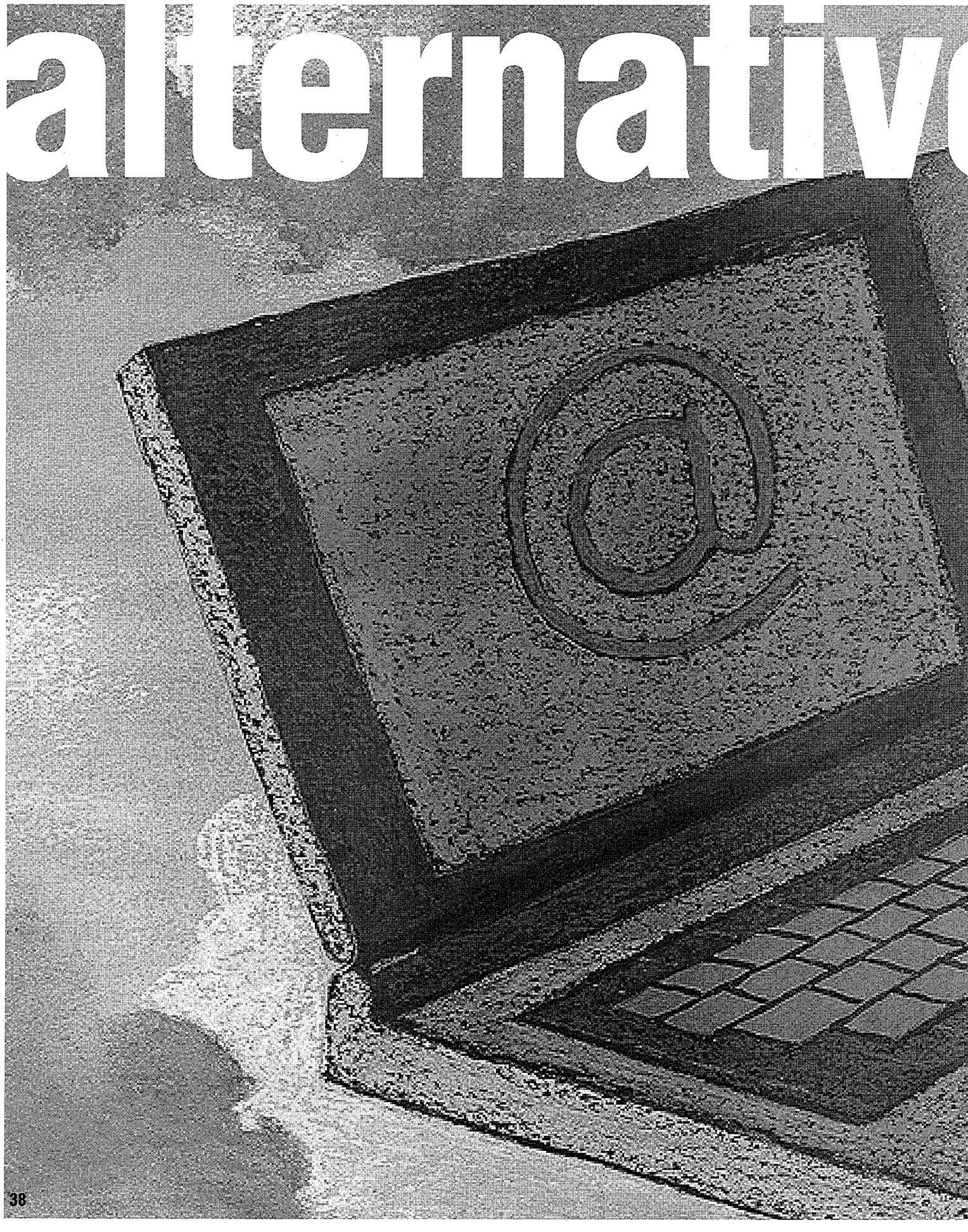
Some credit-free short courses, seminars or workshops also are offered at the regional centers to meet the needs of specific community groups. Students may register on the main campus or at the regional centers in accordance with a pre-determined and published schedule. For general information, call (734) 677-5027.

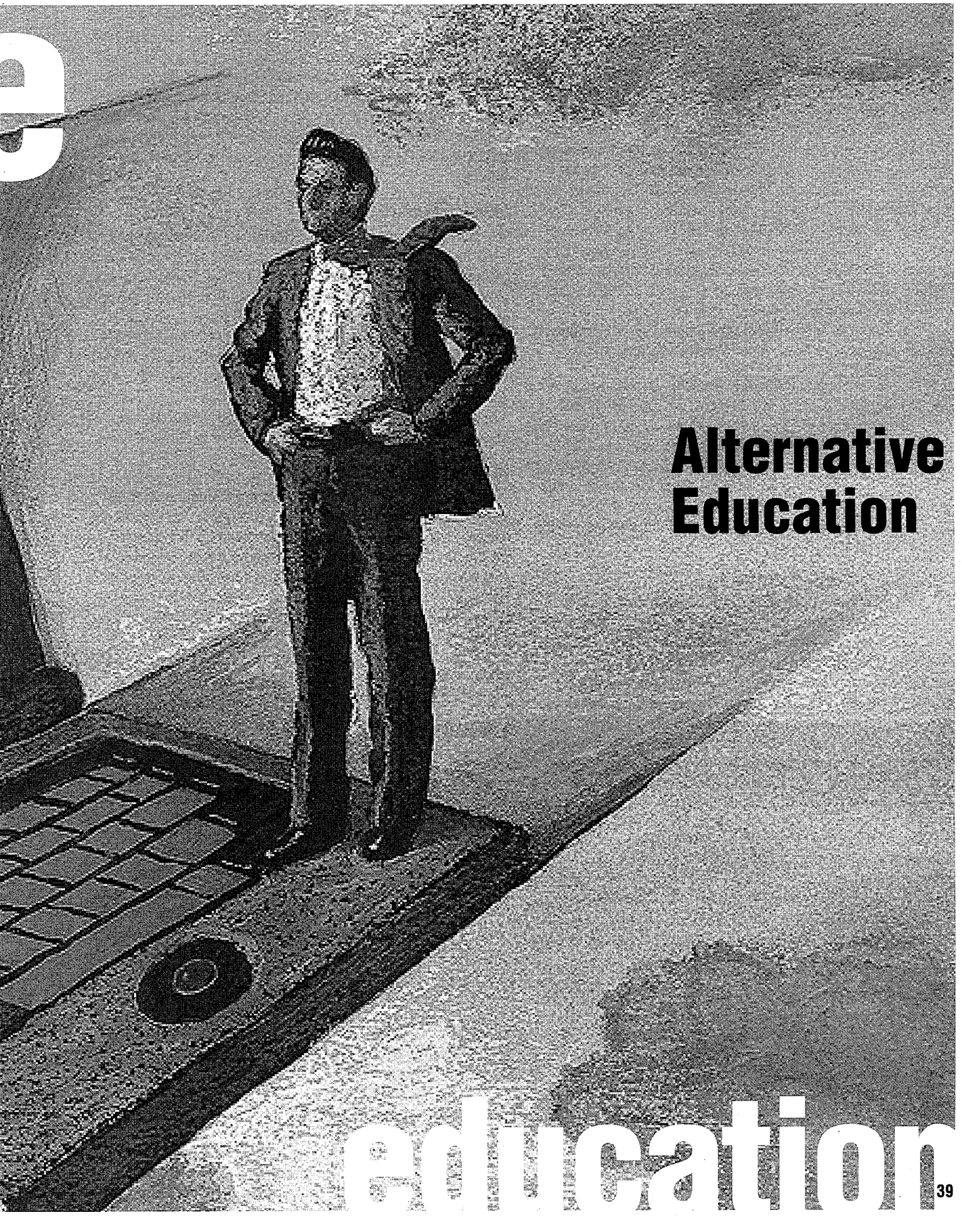
Emeritus Program

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, credit-free courses, workshops and seminars are provided with tuition waived. Registration is conducted on site.

These residents also might be eligible for tuition-free credit classes, although they are required to pay a per-semester registration fee for credit courses. Contact the Department of Business and Community Services for eligibility details.

alternativ





Alternative Education

Alternative Education

Alternative education opportunities and other educational services are offered to the community through the Alternative Education Division. These offices extend the resources, facilities and services of the college to on-campus students and the community through many innovative practices and programs. The Office of Extension Services and Distance Learning and the Business and the Office of Community Services offer courses at off-campus locations in Washtenaw, Lenawee and Livingston counties. Distance learning opportunities include televised instruction or participation in programs established by the Workplace Learning Center in which students gain skills from a working experience or academic service-learning in a compensated business-related position. WCC also offers articulated programs in conjunction with 18 local public school districts and 11 colleges and universities. The Institute for Workforce Development offers customized training programs for Washtenaw County employers.

Lifelong educational opportunities are made readily available to the general public through a wide variety of workshops and short courses offered each semester. These activities allow individuals or groups to explore options ranging from new career ideas to the development of personal skills for their professional or community activities along with other life experience credit options. Continuing Education Units (CEUs) are offered for some non-credit programs, courses, or workshops as a measurement of completion.

Continuing Education Units (CEUs)

The Continuing Education Unit (CEU) is a measure of the amount of organized study a person has completed, and provides an orderly format for the recognition and quantification of noncredit 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. CEUs are a nationally recognized recording device for substantive noncredit learning experiences and are an appropriate measure of in-service education and training. Normally, courses for which CEUs are awarded are not eligible for college credit.

Evening and Weekend Degree Programming

The evening and weekend degree program is designed to serve students pursuing education on a part-time basis with a special slate of courses offered Monday through Thursday evenings and Saturday morning. The Accounting and Business Management degree programs are available in this flexible format, which may lead to an associate's degree within three years.

This accelerated degree program is designed to serve students who need to complete a degree in less than the usual allotted time. They accomplish this by following a more concentrated course of study over a shorter period of time.

The Institute for Teaching and Learning Support Services

The Institute for Teaching and Learning Support Services provides a comprehensive program of teaching and learning services which ensures that students have adequate support to achieve their learning goals and that faculty have adequate support to pursue their plans for curriculum development and teaching enhancement. Learning Support Services and Learning Disability Services comprise part of the institute's responsibilities.

Learning Disability Services

The College employs a learning disability specialist who assesses and identifies educational needs, instructs students in learning strategies, and helps all students develop the confidence to reach their potential. Referrals are taken from instructors and staff, outside agencies, self-referrals, and Early Academic Alerts. Cognitive and achievement testing, ADD/ADHD referrals, self-advocacy training, vocational recommendations based on testing, learning strategies, and directing students to appropriate campus services or community agencies are some of the services offered. The office is located on the second floor of the Student Center Building. The phone number is (734) 973-3493.

Learning Support Services

The College provides services to differently abled, economically disadvantaged, limited English speaking, and refugee students. These services include tutors, interpreters for the deaf, readers for the blind, and other assistance to help students successfully complete their programs. For additional information on eligibility for services, contact the Office of Learning Support Services (formerly Special Populations), located on the first floor of the Liberal Arts Building, Room 104. Hours of service are 9 a.m. to 7 p.m. Monday–Thursday and 9 a.m. – 3 p.m. on Friday. Call (734) 973-3342. If you are hearing-impaired, call the TDD number: (734) 973-3479.

Tutorial 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). Tutorial hours are 9 a.m. to 7 p.m. Monday–Thursday and 9 a.m. to 3 p.m. on Friday.

Telecourses

Telecourses are college classes broadcast over local stations or available for viewing in the Learning Resource Center on campus. Students view videotaped lectures and supplement them with outside readings, papers, and other assignments. Each course begins with a required orientation/first class meeting with the instructor and may be followed with additional sessions during the semester. Examinations are given periodically. Students earn college credit which may be applied to appropriate programs of study. Further information is available by calling the Telecourse Hotline at (734) 677-5056.

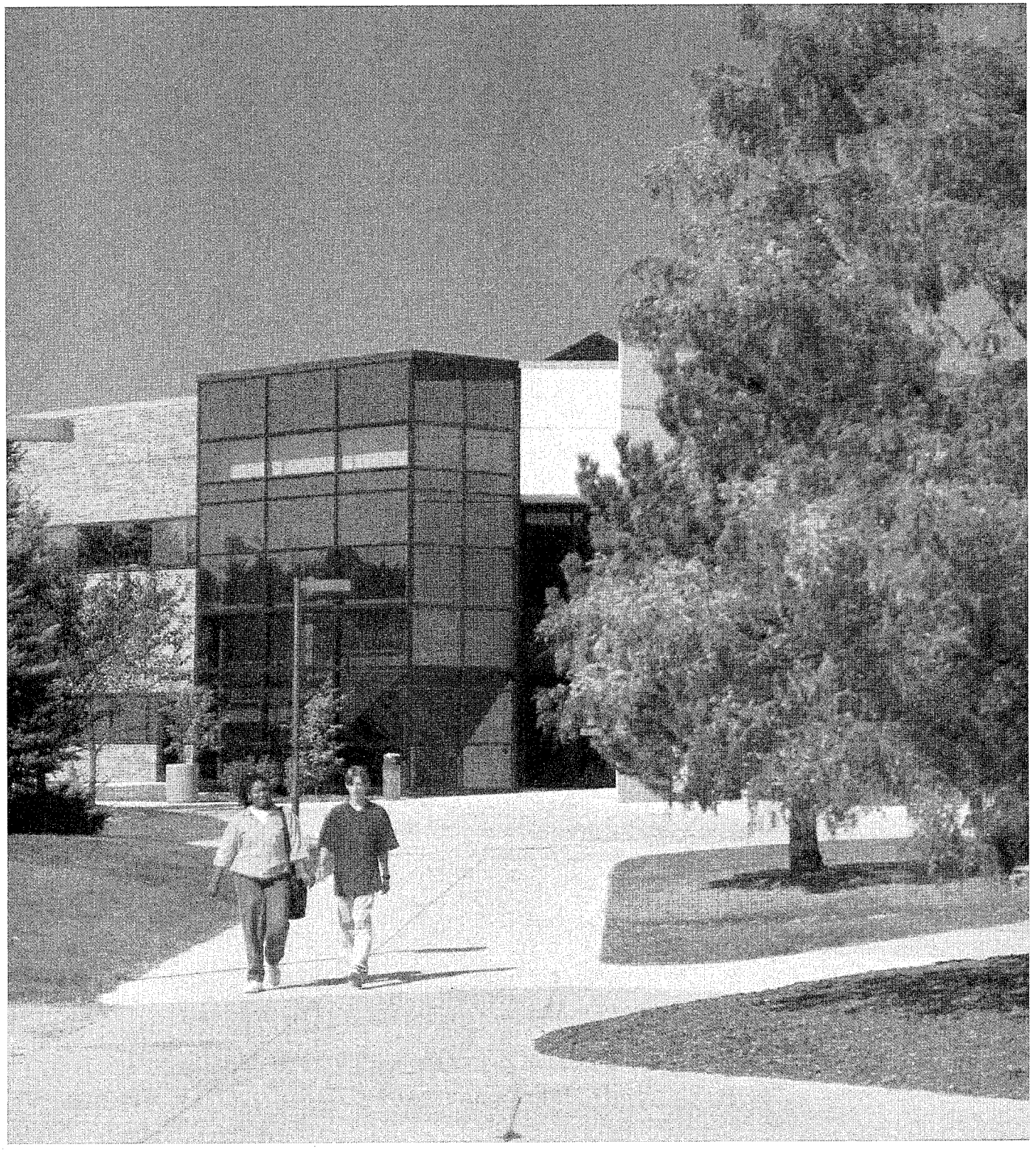
Women's Resources

See Student Support Services - Adult Resource Center section

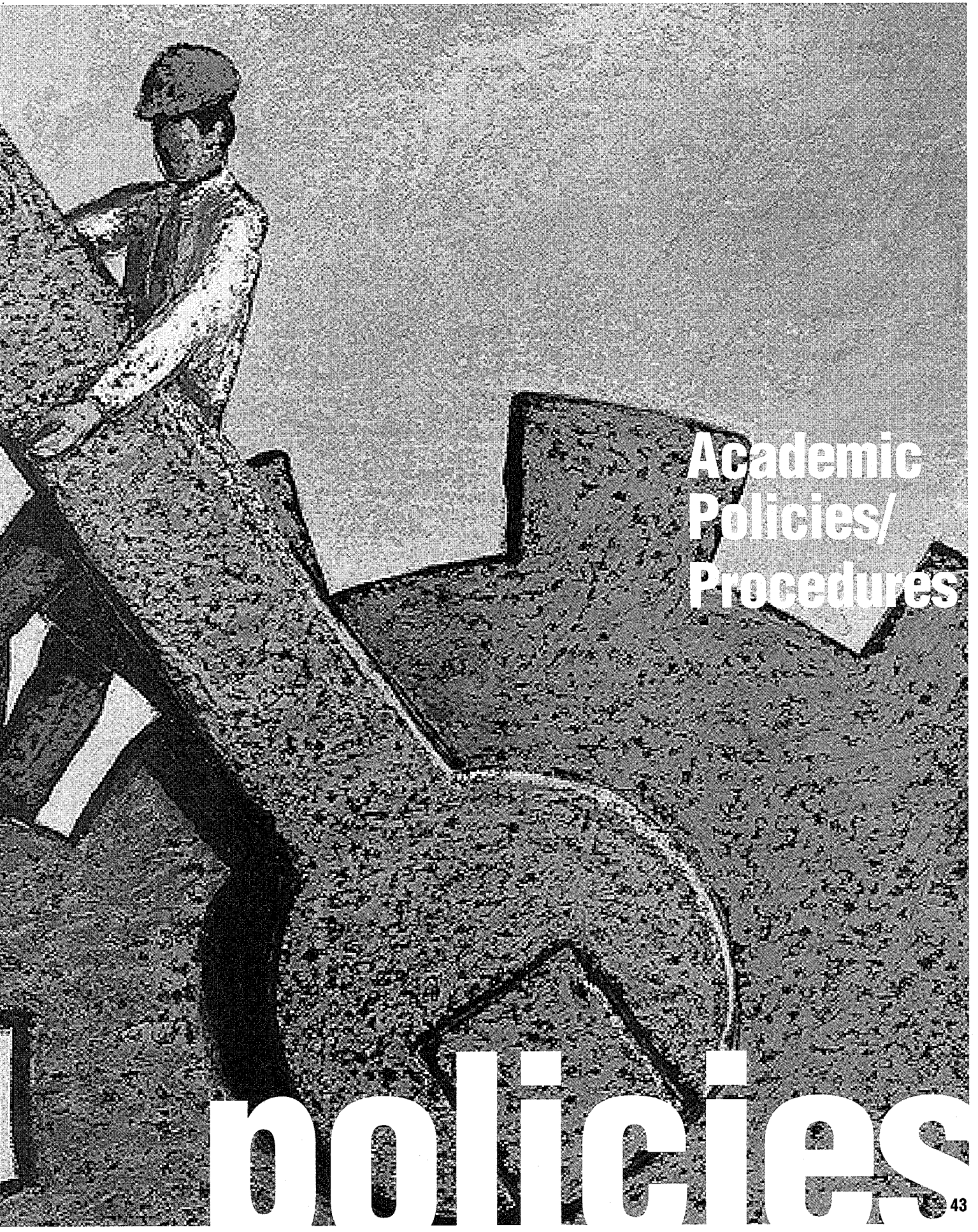
The Workplace Learning Center

The Workplace Learning Center is located on the first floor of the Student Center Building. It offers students an integrated format of classroom-style learning and career-related work experience through cooperative education, (co-op) internship, and community service placements. Staff work with students, academic departments, and employers to identify appropriate co-op, intern, and academic service-learning assignments. For a description of co-op courses see page 112.

Workshops on résumé preparation, interviewing, job-search techniques, co-op orientations, and other related topics are offered by the staff each semester.



academic



Academic Policies/ Procedures

policies

Academic Policies/Procedures

Dean's Honor Roll and Graduation Honors

The Dean's 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 count as one semester), have accumulated at least 15 credits and earned a minimum 3.7 grade point average are also on the Dean's 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.

Honors Options in Associate Degree Programs

Two honors options are available for all WCC students: special courses designated as honors sections, and honors options in WCC associate's degree programs.

WCC offers some sections of courses that will be designated as honors sections. The honors sections of courses will provide interested students with the opportunity to pursue more challenging work in a supportive environment in which a high level of scholarship is stressed. There is no prerequisite for registering for honors course sections. The honors sections of courses generally will be characterized by:

1. Greater emphasis on the use of primary source material or artifacts.
2. Greater emphasis on independent study and research.
3. More challenging course material having a higher degree of intellectual rigor.
4. An interdisciplinary approach to course material where such an approach is appropriate.
5. Greater emphasis on the development of students' critical thinking skills.
6. Use of, or experimentation with, alternative methods of instruction.
7. Satisfaction of the honors service component through coursework where appropriate.

An Honors Program option is available for some associate's degree programs. Students graduating with honors options in associate's degree programs will have this designation printed on their diplomas. Students wishing to fulfill the honors option requirements at WCC will need to:

- complete twelve (12) hours of designated honors classes prior to graduation in the following:

  two courses in general education, one course in the student's program area, and the required capstone seminar

- maintain a 3.5 GPA overall average with a 3.5 GPA in the Honors classes and no less than 3.0 GPA in any one Honors class
- meet the service requirement of the Honors Program through activities approved by the honors director and/or steering committee
- meet any other requirements for graduation from WCC

An Honors Program brochure is available from the Information Center, or you may call the Counseling Office at (734) 973-5124 for further information. Also, please see the section below on Phi Theta Kappa, the International Honor Society for two-year colleges.

Articulation Agreements with Public Schools

Articulation agreements exist between WCC and 18 local area public school districts. The purpose of the articulation agreements is to coordinate curriculum to eliminate duplication, cover omissions, and to ensure a smooth transition from high school to the community college. The College will grant credit to articulated students for identified task competencies achieved in secondary programs. Credit earned from public school articulations will not be awarded until the student has earned six or more credit hours at WCC with a cumulative grade point average. of at least 2.0. Students should check with the WCC Office of Student Records or their high school guidance counselor for more detailed information.

Associate's Degrees

Since the Fall 1992 semester, WCC has offered five associate's degree titles which reflect students' chosen programs of study. The degree title and specific program title appear on the diploma. Students completing general studies programs have only the degree title indicated on their diploma. The degree titles and their purposes are as follows:

Associate in Arts (A.A.): primarily a transfer degree, used for all humanities and social science programs.

Associate in Science (A.S.): primarily a transfer degree, used for programs carrying large math and science requirements. Most math and natural science programs use this designation. Additionally, some transfer programs in health, technology, and business use the A.S. degree title.

Associate in Applied Science (A.A.S.): the standard career-entry degree for career-entry programs in health, business, and technology. It also has transfer use in engineering technology.

Associate in Technical Studies (A.T.S.): exclusively for career-entry technical programs.

Associate in General Studies (A.G.S.): for student personal interest or customized programs. The A.G.S. is provided for in all divisions. Although students will have flexibility in defining a program, all core requirements for an associate's degree must be met.

Certificates

Effective with the start of the 1998-99 academic year, WCC will offer four types of certificate programs. They are designed to meet a broad range of student needs not possible with the standard one-year certificate. The certificate titles with brief descriptions are as follows:

Advanced Certificate: For post-associate's degree programs for students who are pursuing advanced study in an occupational or general area. These may be from nine to 36 credits with the focus on study beyond the associate's level.

Mastery Certificate: For standard credit programs of 25 to 38 credits. Primarily used to prepare for entry-level occupations, this certificate may be a discrete program or the first year of an associate's degree program.

Achievement Certificate: For short-term credit programs primarily used to prepare students for entry-level occupations or occupational certifications. This certificate of six to 24 credits may also be used to document completion of one part of a longer program.

Certificate of Completion: For short-term noncredit programs or programs of less than six credits.

Certificates totaling 15 or more credits are awarded at the College's annual May and December commencement ceremonies.

See the General Information section of this catalog for a list of WCC programs by degree title and type of certificate.

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. Students are responsible for all material covered during their absence. No person is allowed to attend a class unless officially enrolled on a credit or noncredit (audit) basis with the appropriate tuition and fees paid.

Cancellation of Classes

The College may cancel course offerings due to low enrollment, lack of instructor, or any other reason deemed viable by the vice president of instruction and student services. Every effort is made to accommodate students into alternate sections. Information regarding the current status of course offerings for all semesters is available at the Office of Student Records.

Core Curriculum or General Education

In response to the expectations and demands of employers and four-year institutions, Washtenaw Community College developed a core curriculum which was instituted in Fall 1993. This curriculum more effectively prepares students to enter the workforce, transfer to four-year institutions, and be well-educated members of the community. Students entering the College in Fall 1993 or later are required to complete this "core of common learnings," which consists of 24 learning areas, to receive an associate's degree. These areas include communication, mathematics, critical thinking, computer literacy, arts and humanities, natural sciences, technology, and social science.

See page 59 for a complete description of the core curriculum.

Course Load

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-Granting Procedures

Continuing Education Units (CEUs) Normally, courses for which CEU's are awarded are not eligible for college credit. However, under special circumstances CEUs may be evaluated for college credit as "credit for prior learning."

Correspondence Courses Only correspondence courses from accredited colleges and universities are acceptable.

Credit for Prior Learning (CLEP, Credit by exam, Credit by Portfolio)

Washtenaw Community College recognizes that students come to the College with competencies obtained from prior learning experiences such as work experience, previous training or education, and various forms of self-learning. To receive credit, a prior learning experience must be verified. If such learning 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.

To receive credit, a prior learning experience must be verified by one or more of the following methods: credit by examination, portfolio evaluation, or other College-approved technique for evaluating educational experiences that meet state or national criteria. 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.

College Level Examination Program (CLEP)

A maximum of three semester credits may be granted for the successful completion of each of the five general examinations

College Level Examination Program (CLEP)
A maximum of three semester credits 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. The Office Student Records has CLEP brochures which contain a complete list of available examinations. Some general and subject examinations also require the successful completion of an essay examination or laboratory demonstration.

Credit by Examination
Students who appear to have proficiency for a course may, upon recommendation of a full-time instructor, and with the approval of the appropriate department chair, take a course examination for credit. The student must first have completed the application process and been accepted to the College as a credit student. The cost of the examination is based on the number of credits in the course. The maximum number of credits earned by examination that may apply toward a degree is 30. Credit is granted and posted on the transcript. Credit earned by examination may not apply toward satisfying the minimum 15 residence credits required for graduation. Each student is responsible for arranging to complete the various examinations. Credit earned by examination 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, credit earned by examination will not transfer to other colleges or universities. Students are allowed to attempt only one credit by examination per course.

Credit by Portfolio/Document Evaluation
Students with background experiences/certifications obtained through military service, on-the-job training, nursing 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 to begin the process, which also includes contacting the appropriate faculty member(s) in the student's enrolled program area. Courses granting CEUs are not normally eligible for college credit.

Students must submit to the appropriate faculty member all official documents and specific information on the length and content, as well as other pertinent documentation, before an evaluation is completed. Normally, a maximum of 20 credits may be accepted in this category (with the exception of students with backgrounds in Nursing or apprenticeship training). Credit earned from non-traditional sources will not be awarded until the student has been fully admitted to the College and completed at least one credit at WCC. Credit earned from non-traditional sources may not apply toward satisfying the minimum 15 credits in residence required for graduation.

Military Training and Schools
College credit for military training is generally awarded as non-traditional credit. Students must submit an inservice training record and DD 214, unless still on active military duty, for an evaluation of service school training. Students 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 recommendations found in *A Guide to the Evaluation of Educational Experiences in Armed Services*. If a course is not listed, no credit is granted. If a course is relevant to a student's occupational degree objective, a decision as to acceptance and applicability of credit is made by the program advisor and appropriate dean. Other courses may be acceptable as elective credit.

An exception to the above is accredited military schools (e.g., The Community College of the Air Force); credit for courses from accredited schools follows the policies set forth under the category Transfer Credit from Other Colleges and Universities.

National League for Nursing (NLN) Examination.
Advanced Standing Nursing students who are already LPNs 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, Nursing of the Childbearing Family, and NUR 132, Nursing of the Childbearing Family Clinical Practice. Credit by examination for five credits will be posted on the transcript.

Proprietary Schools
Credits are accepted only from proprietary schools accredited by one of the regional accrediting agencies. (Some specialized business and technical accreditations may be acceptable.) Students may have to provide course descriptions or catalogs along with an official transcript.

Transfer Credit from Other Colleges and Universities
Applicants must submit an official transcript from all colleges previously attended if they plan to apply the credit from the other institution(s) to their program at WCC. 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* governs the acceptance of transfer credit. The coursework may be evaluated, at the student's request, after the student has completed at least one credit at WCC.

Credit may be granted for courses in which a grade of "C" or better was earned at any of the institutions with a general (AG) or provisional (AP) rating. Credit is not accepted from schools that have an N or NP rating. If the school is not listed, refer to the section of this catalog titled Non-Traditional Credits.

Transfer courses which are evaluated as being equivalent to courses WCC offers are posted on the transcript as such. Courses which are evaluated as college level but are not equivalent to courses offered at WCC are posted as elective credit in the appropriate discipline. Transfer courses which are equivalent to WCC courses will meet the same core elements as the WCC course. Courses evaluated as elective credit will not satisfy any core elements. If the elective credit transfer course was completed within the last 10 years and the student is able to provide a complete description and detailed syllabus of the course, the student may petition to the Office of Student Records to have the transfer course evaluated for core elements. Decisions on the completeness of the course description and detailed syllabus will be made by the Curriculum Office. Decisions on the core elements met by the transfer course will be made by the vice president of instruction and student services.

Declaring Educational Intent

In order that students develop and achieve their educational plans, they are asked to declare their primary educational goal and program or area of study upon application to the College. This information is verified and updated during each subsequent registration period.

Grading Scale

Grade .....Grade Points Per Credit Hour

A – Superior.....4

B – Excellent 3

C – Average 2

D – Below Average.....1

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. The final grade will depend on the quality of the completed work and its significance to the course. After the deadline, the 'I' grade will change to a grade that has been preset by the instructor. 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.

Auditor 'AU' No Credit: A student may enroll in a credit course on a noncredit (audit) basis. The number of credits the course normally carries is included as part of the total credit load and tuition assessed accordingly. Change from audit to credit or credit to audit status is not permissible after the close of the refund period. Credit is not earned in courses taken as an auditor.

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. 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 'P' grades can be applied toward an associate degree or certificate.

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 mailing of the grade to the student.
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 wish to appeal to the dean.
4. If 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 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 mailing of the grade to the student.

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.

Application for Graduation

To be eligible for graduation, you must file an Application for Graduation with the Office of Student Records at least four months prior to the expected date of graduation. This form is available from the Office of Student Records. The date of grad-

uation that will appear on the diploma and transcript is the last month of the semester in which you complete all requirements for graduation. Associate Degrees and Certificates of 15 or more credit hours are awarded at the College's annual May and December commencement ceremonies. To receive a degree or certificate, you must file an application for graduation even if you do not plan on attending commencement ceremonies. You may not receive a certificate and a degree from the same program area during the same semester.

Associate's Degree Requirements

WCC offers five associate's degrees. The degree titles with their descriptions are on pages 44-45. To be eligible for graduation with a degree from the College you must meet all of the following requirements:

1. Fulfill all of the prescribed course and credit hour requirements of the specific degree curriculum. A minimum of 60 credits is required. (See Program Requirements section on the next page.) Courses numbered 051 and below do not count toward graduation.
2. Complete a minimum of 15 residence credits (Washtenaw Community College credits) for each degree pursued. Credit for prior learning, including credit by exam and transfer credit, may not be used as residence credit.
3. Fulfill the 24 core curriculum elements (see pages 59-60). If you have earned a bachelor's degree or higher from an accredited U.S. college or university, you may file a petition to waive the core element requirements in the Office of Stu dent Records.
4. Earn a minimum cumulative grade point average of 2.0.
5. Meet all financial and library obligations to the College.
6. File an Application for Graduation form.

College Certificate Requirements

WCC offers four types of certificates. Descriptions of the certificates are on page 45. To be eligible for graduation with a certificate from the college you must meet all of the following requirements:

1. Fulfill all of the prescribed requirements of the specific certificate curriculum including courses, credit hours, and/or hours of attendance. Courses numbered 051 and below do not count toward graduation.
2. Earn a minimum cumulative grade point average of 2.0.
3. 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.
4. Meet all financial and library obligations to the College.
5. 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.

In addition to the requirements listed on the previous page, the following requirements apply to the specific type of certificate listed:

Advanced Certificate

Complete a minimum of 75 percent of the total credits required for the certificate as residence credits (Washtenaw Community College credit).

Mastery Certificate

1. Complete a minimum of 3 credit hours in English (ENG 091 or higher), or Communications (COM 101, or COM 102)
2. Complete a minimum of 25 percent of the total credits required for the certificate as residence credits (Washtenaw Community College credit).

Achievement Certificate

Complete all credits required for the certificate as residence credit (Washtenaw Community College credit).

Certificate of Completion

Complete all credits, if any are required, as residence credit (Washtenaw Community College credit).

Commencement

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

Student Complaint Procedure

Students having concerns or problems of an instructional nature (e.g., faculty, course offerings) should first confer with the instructor involved in an effort to resolve the issue informally. Issues that are unresolved at the informal stage should be referred by the student (verbally or in writing) to the respective division dean, who will attempt to mediate a resolution to the problem. Issues unresolved by the dean also may be referred to the dean of student services who will continue to mediate a resolution. If the problem is still unresolved, the student may initiate a final appeal to the vice president for instruction and student services (see Grade Appeal Procedure page 48).

Student Assessment Policy

WCC is committed to maximizing success for each student. The college is committed to an open access, student-oriented learning atmosphere in which each student has the opportunity to acquire basic literacy skills. While WCC is open to all individuals who can benefit from its educational and service programs, the mandatory assessment process for new students provides information that helps the College match student skill levels with the right courses. Some health-related programs have an additional screening process. See the Admissions section of this catalog. This interview process may include reviewing past educational work experiences as well as current life and educational goals and/or testing.

Student Classifications

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's degree or has not qualified for upper division classification in a four-year college or university.

Guarantee of Student Success Policy

WCC is committed to enssuring that all its degree graduates demonstrate the knowledge and performance skills that are specified in their program. This extends beyond the student's graduation from WCC to include performance in the occupational area studied or successfully transferring into a similar or compatible program at a four-year college or university. Contact the dean of student services for further details and/or a copy of the full policy.

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's degree program. They must have completed at least 12 hours of course work leading to an associate's degree (part-time students may be eligible) and have a 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 Information Center, or you may call the faculty advisor for Phi Theta Kappa in the Counseling Office at (734) 973-5124.

Program Requirements

In meeting program requirements, students may select either those requirements that were in effect during the year in which they initially enrolled at WCC or they may request to change to the requirements of any subsequent year. If students interrupt their studies for more than two consecutive semesters, the College strongly encourages them to meet the requirements in effect the year in which they return. Graduation requirements may be completed during any semester.

Course Substitutions

Courses required in 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 Requirement

Under extenuating circumstances, a course required in a program of study may be waived; all waivers must be approved by the program advisor, the division dean, and the vice president for instruction and student services. A Waiver of Program Requirements form must be filed with the Office of Student Records.

Release of Student Information Policy

It is the purpose of the Board of Trustees' Policy on Release of Student Information to enssure 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 the Office of Student Records.

Education records are maintained in various offices of Washtenaw Community College, 4800 E. Huron River Drive, Ann Arbor, Michigan. Refer to the entire policy 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 per-

forming an assigned college activity and those designated by federal law.

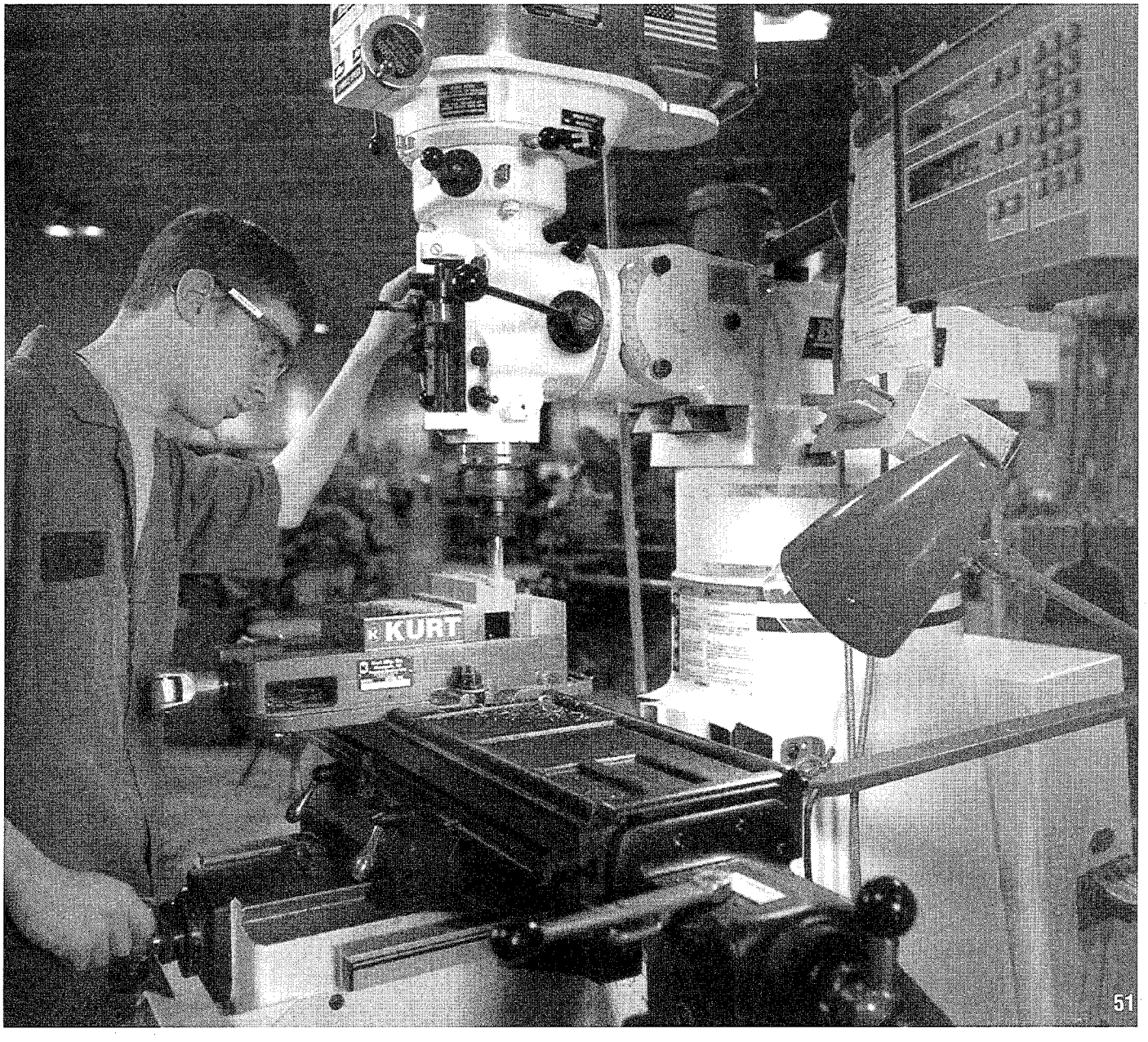
Although it is the practice of the College not to release information without the informed consent of the student, at its discretion, the College may provide directory information in accordance with the provisions of FERPA to include: student name, address, telephone number, semesters of attendance, 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 or session, a petition for exemption with the Office of Student Records. 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.

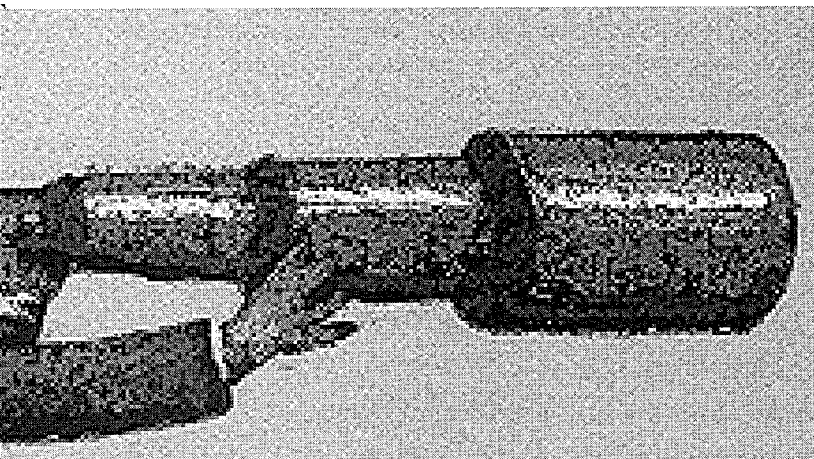
Students wishing to review their educational records must file a written request with the custodian of the records, listing the item(s) of interest. Records covered by FERPA will be made available for inspection within 30 days of the request.

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.

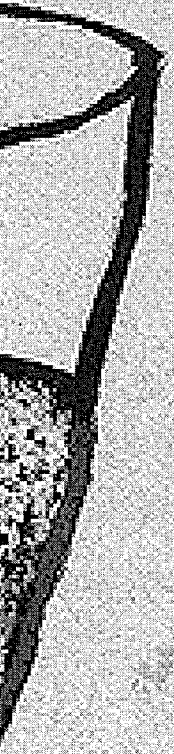
Students who believe that the adjudication of their challenge was unfair, or not in keeping with the provisions of FERPA, may request in writing assistance from the president of WCC. Further, students who believe their rights have been abridged may file complaints with the Family Policy and Regulations Office, U.S. Department of Education, Washington, D.C. 20202, concerning the alleged failure of WCC to comply with the Act. Revisions and clarifications of college policies are published as experience with the law warrants.



campus



Campus Information



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 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: WEMU-FM (89.1), WHMI-FM (93.5), WIQB-FM (102.9), WUOM-FM (91.7), WAAM-AM (1600), WHMI-AM (1350), WJR-AM (760) and WNRS-AM (1290). 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.

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 are 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 dean of student services.

Emergency Notification Service for Students

If the Office of Campus Safety and Security receives a telephone call stating that an emergency exists for a student on campus, the Campus Safety and Security staff will consult student records and attempt to locate the student in the assigned classroom. If they cannot be located, an attempt will be made to advise the caller that they could not be located. No other information will be released to the caller.

Emergency Telephones and Escort Services

The Office of Campus Safety and Security ensures the safety and security of the College community. This includes nighttime escort services for students walking to their cars. An escort can be obtained by calling 3411 from any in-house telephone. The Office of Campus Safety and Security is located in the Plant Operations building.

Six emergency telephones are available on campus. Locations are:

- Adjacent to the Business Education Building
- Adjacent to the Technical and Industrial Building (near the plaza)
- Lobby of the Occupational Education Building
- Southeast corridor in the Occupational Education Building
- Third floor of the Liberal Arts and Science Building
- Adjacent to Lot C near the Family Education Building

Exterior emergency telephones are answered 24 hours per day. Interior emergency telephones are answered during normal school hours when the Information Center is staffed.

Food Services

Food service is available on the first floor of the Student Center Building in the cafeteria and vending machine area There are also vending machines in the northeast corner of the Morris Lawrence Building. During the fall and winter semesters, the Artists' Gallery dining room also is open for lunch. Students staffing the kitchen and dining room earn credit in the Culinary Arts program.

Information Center

The College Information Center, located on the second floor of the Student Center Building, is available to assist individuals who have questions or concerns. Many printed materials about the College, including program brochures, are available at the Center. The Center can also direct individuals to specific areas/individuals, provide AATA bus schedule information, and offer other assistance. The Information Center can be reached at (734) 973-3622.

Lost and Found

The Lost and Found is located in the Campus Safety and Security Office. Any person finding lost property on campus should call or deliver it to the Campus Safety and Security Office. Persons losing property on college premises should contact the Campus Safety and Security Office with a description and approximate value of the item. A report will be made by the Campus Safety and Security Office if requested.

Medical Emergency Procedures

In the event of a medical emergency, dial (734) 973-3411. Campus Safety personnel are trained in emergency medical procedures and can access other emergency medical services.

Meeting Rooms

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

Parking

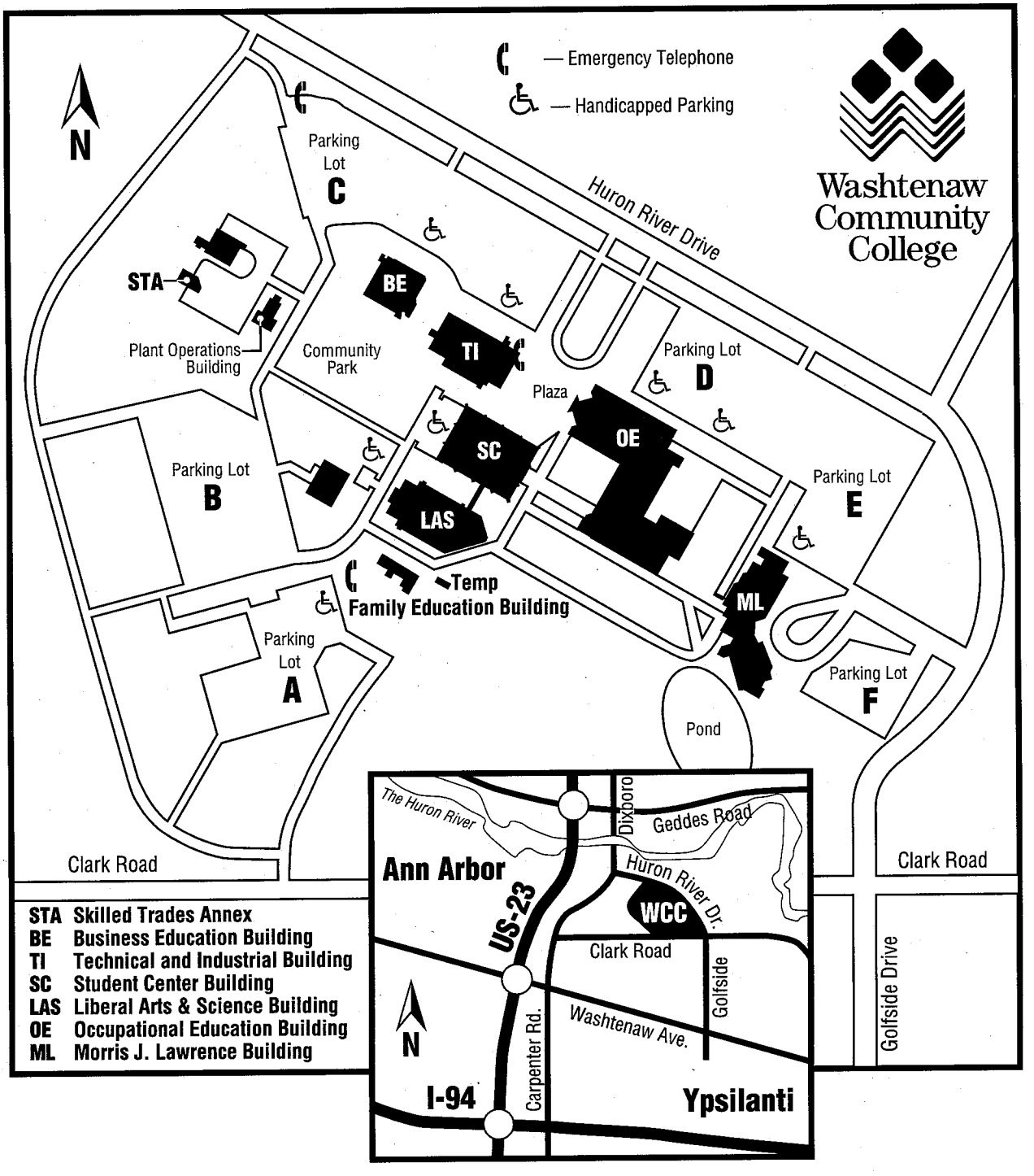
Parking is provided on campus for general, handicapped, visitor, vendor and service vehicles. Parking is prohibited in the following areas: bus stops, fire lanes, main travel lanes, sidewalks, handicapped spaces without a permit, restricted parking spaces without a permit, marked crosswalks, building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

Smoke-Free Campus

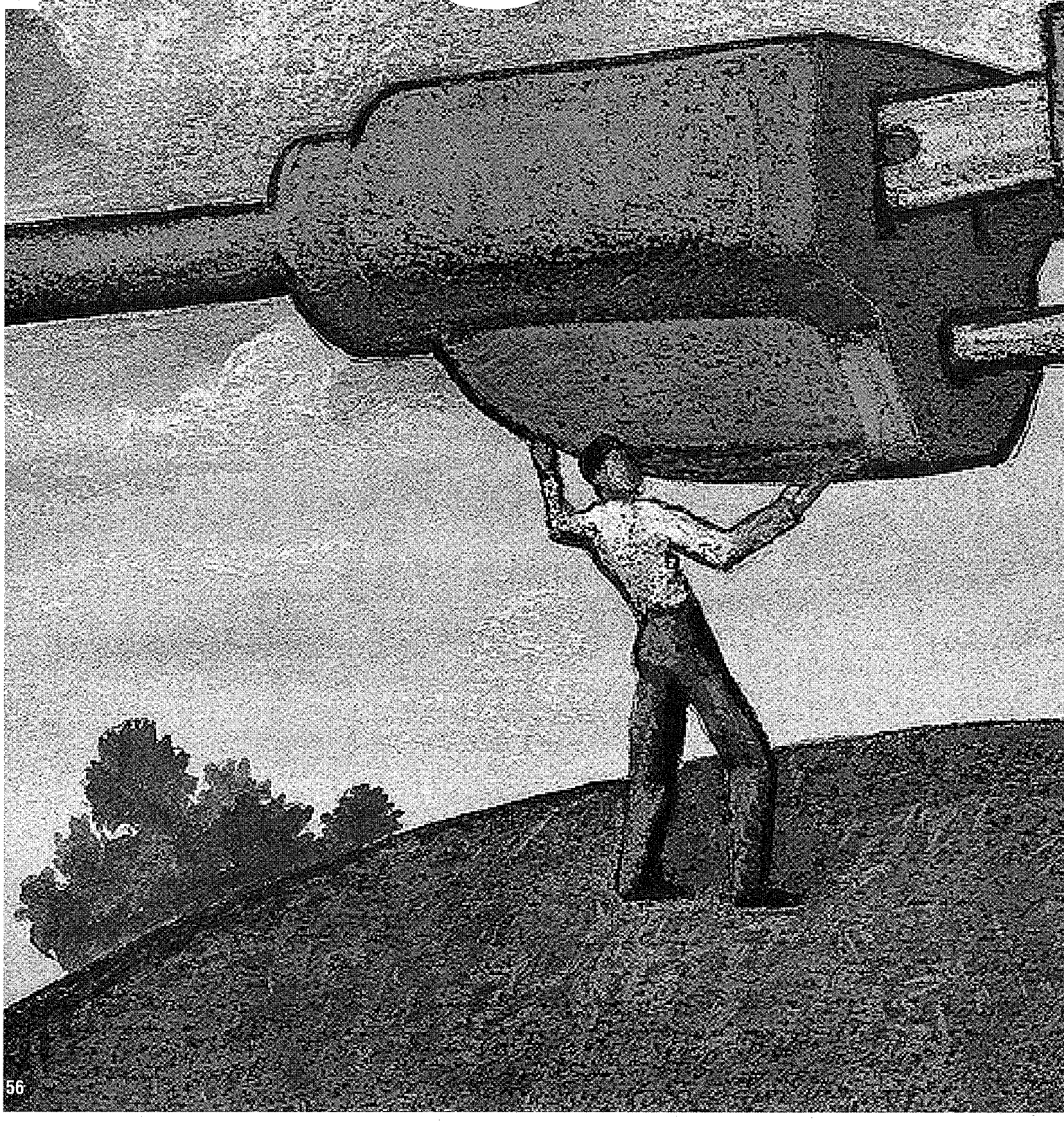
In the interest of providing a safe and healthy environment for the College's students, employees, and visitors, smoking is prohibited in all Washtenaw Community College buildings.

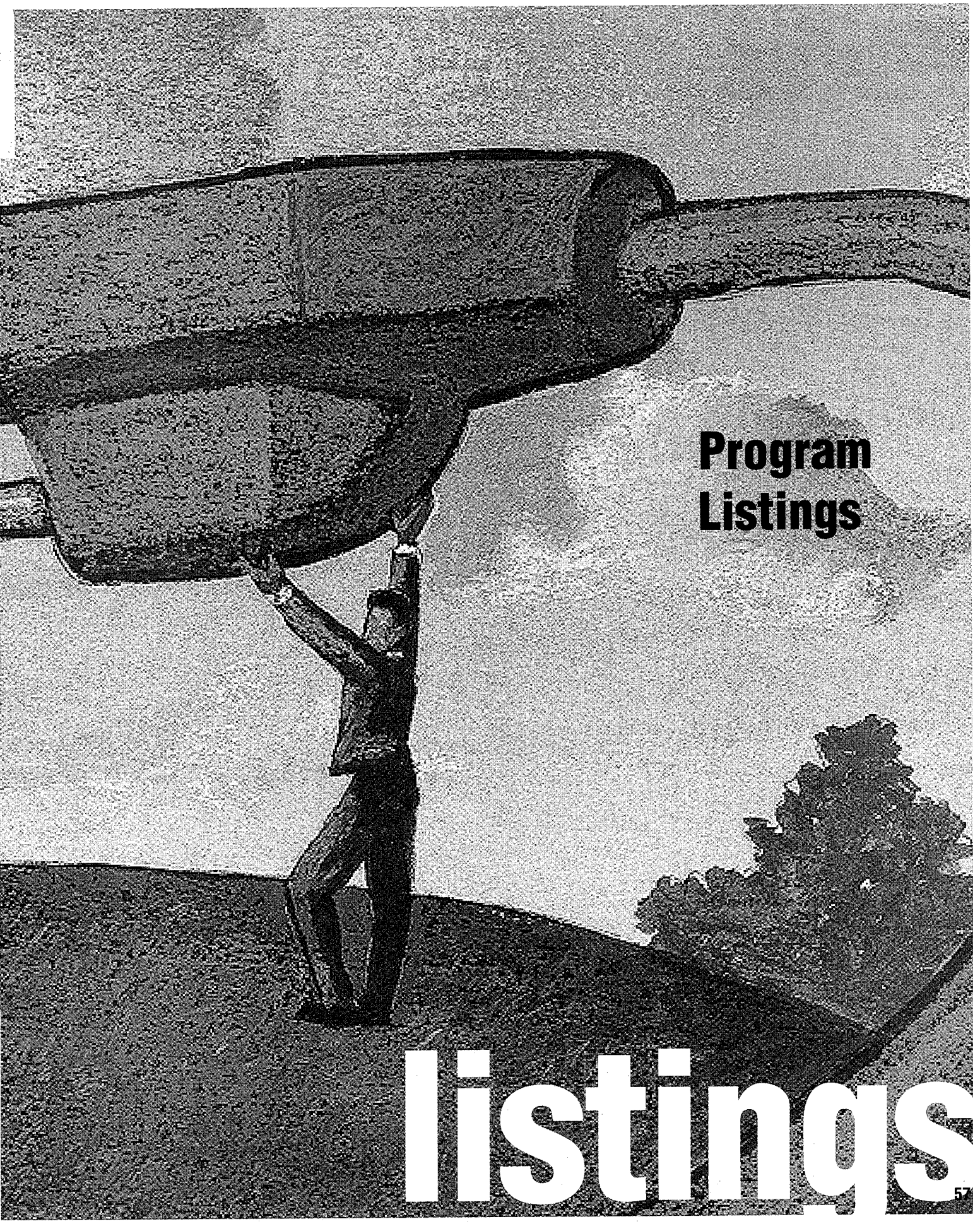
Reporting Theft and Vandalism

Incidents of criminal acts should be reported to the Office of Campus Safety and Security where staff will assist in filling out appropriate reports. The Office of Campus Safety and Security will also assist the Washtenaw County Sheriff's Department in establishing the facts surrounding an incident and determining preventive measures.



program





Program Listings

listings

Program Index

Accounting 61
Administrative Assistant Technology Degree 65
Administrative Assistant Technology Mastery Certificate 65
Architectural Drafting 91
Architectural Drafting Detailing 92
Automotive Body Repair 89
Automotive Body Service 89
Automotive Mechanics 90
Automotive Service Technology 90
Automotive Spray Painting Mastery Certificate 91
Automotive Spray Painting Achievement Certificate 91
Business Computer Programming 67
Business Management 62
Business Marketing 62
Business Sales 63
Child Care 75
Computer-Aided Drafting (CAD):
- Electronic Option 92
- Mechanical Option 93

Computer Science Transfer 85
Computer Systems Technology ..... 68 and 95
Computerized Accounting 61
Construction Management 106
Correctional Science Degree 76
Correctional Science Mastery Certificate 76
Criminal Justice 77
Criminal Justice — Law Enforcement Certification (Police Academy) 78
Culinary Arts 69
Dental Assisting 71
Digital Prepress 101
Drafting Detailing 93
Electrical Engineering Technology 96
Electronics Technology Degree 97
Electronics Technology Mastery Certificate 96
Fluid Power Technology 97
Food Production Specialty 70
General Studies ..... 6 and 59
Graphic Design Technology:
- Design Option 102
- Illustration Option 102

Hotel-Restaurant Management 70
Human Services 82
Human Services Transfer 82
Hydraulic Assembly 98
Industrial Drafting Technology 94
Information Processing Technology 66
Journeyperson Industrial 107
Liberal Arts -Transfer
- Humanities and Social Science 83
- Math and Natural Sciences 87

Machine Operation 98
Machine Tool Technology 98
Mechanical Engineering Technology/Manufacturing Engineering 94
Medical Administrative Assistant Technology Degree 66
Medical Administrative Assistant Technology Mastery Certificate 66
Microcomputer System Support 68
Numerical Control Machine Operations 99
Numerical Control Technology 100
Nursing 71
Nursing Transfer 73
Pharmacy Technology 74
Photographic Assisting 104
Photographic Technology 103
Photographic Technology - Marketing Option 104
Pre-Engineering Science Transfer:
- All Fields except Chemical and Materials 87
- Chemical and Materials Engineering Option 88

Pre-Medicine Transfer:
- Biology Option 85
- Chemistry Option 86

Professional Office Systems 67
Quality Control Technology:
- Electronics Option 108
- Management Option 108
- Science and Engineering Option 109
- Specialty Option 109

Radiography 78
Refrigeration and Air Conditioning 107
Respiratory Therapy 79
Robotic Technology 100
Scientific and Technical Communication 84
Skill Building 26
Small Busines and Entrepreneurship Achievement Certificate 64
Small Business and Entrepreneurship Mastery Certificate 64
Surgical Technology 81
Trade Related Instruction (Apprentice and Employee Training) 106
Toolroom Machine Operation 101
Welding Maintenance Mechanics 105
Welding Technology 105

General Studies Programs

Associate's degree programs in general studies with concentrations in one of the five instructional divisions can be created to meet individual students' needs and interests. Students may choose what area(s) they wish to emphasize. They begin this program by meeting with a counselor who will assist them with customizing their program to ensure that the courses selected meet all of the core curriculum elements and graduation requirements. An individual's program will be entered into the computer system so that it can be stored, revised, and used to evaluate progress toward graduation.

The requirements of general studies programs are: 1) a minimum of 60 credit hours, 2) a minimum earned cumulative GPA of 2.00, 3) completing the 24 core elements, and 4) meeting the 15-credit WCC residency requirement. Approximately 24 credit hours are needed in English, political science, biology, computer information systems and math in order to meet the core curriculum requirements. Specialty courses also meet core elements.

Associate's degree programs in general studies may be completed in the following areas:

Business (Code: GSBU)
Health and Public Services (Code: GSHP)
Humanities and Social Sciences (Code: GSHS)
Math and Natural Sciences (Code: GSMN)
Technology (Code: GST)

Washtenaw Technical Middle College

The Washtenaw Technical Middle College made its official debut as a charter school on September 2, 1997. The Middle College is essentially a high school on campus. Its mission is the development of high school graduates for success in high skill/high wage technology-based fields including computing, manufacturing, engineering, business, and health. This program targets its graduates for immediate employment, continuation at WCC, or transfer to a college or university beyond high school. All classes take place on campus and students receive dual credit in the 11th and 12th grade as appropriate, graduating with a high school diploma and college credit for all WCC courses completed. The Technical Middle College has its own dean and board of directors. Admission is open to all high school students. For further information call (734) 973-3410 or visit the WTMC office located in the Student Center Building.

WASHTENAW TECHNICAL MIDDLE COLLEGE

WCC Core Curriculum for all Degree Programs

Effective Fall 1993

WCC's new Core Curriculum requirements became effective in Fall 1993. Students entering the College in Fall 1993 or later are required to fulfill the 24 elements to receive an associate's degree. Following the program listings in the 1993-94 Washtenaw Community College catalog, and all subsequent catalogs, will automatically ensure that students fulfill the requirements. Students who entered into a degree program before Fall 1993 may follow the program requirements listed in the catalog at the time of their entry into that program as long as the program remains active. Transfer requirements of four-year institutions to which WCC students often transfer were considered in the process of creating the core requirements. The flexibility which is built into how the core is met usually enables transfer students to meet the requirements of both WCC and the four-year institution. Counselors can assist you in making appropriate course selections for transfer.

Each specific degree program listed in the College's catalog has been designed to fulfill core curriculum requirements. However, because students seeking a degree in general studies select their own courses, they must be careful to select courses that meet all core curriculum requirements in order to be eligible for graduation. One course may meet several core elements; occasionally two courses in combination may meet a single element; some courses do not fulfill any of the requirements. To see which elements are included in a particular course, please check the course descriptions. Elements fulfilled by each course are indicated, by number, in each description following the words "Fulfills core elements." Counselors and advisors can also assist you in selecting courses that will assure that you meet the core requirements.

In recent years, employers and four-year institutions have been expecting more general education in associate's degree programs. WCC has created the core curriculum to reflect those expectations. The 24 elements included in the core curriculum will assist you in being prepared to enter the workforce effectively, transfer to a four-year institution, or to be a well-educated member of the community.

Note: Students who have earned a bachelor's degree or higher from an accredited U.S. college or university may inquire in the Office of Student Records to waive the core element requirements.

The Core Curriculum Elements:

Communication:

1. To read and listen in a critical and perceptive way; to speak in an organized, clear, and effective manner.
2. To use information sources and information-gathering techniques; to cite sources when producing written communications.
3. To develop, organize, and express thoughts in writing using standard English.

Mathematics:

4. To apply basic mathematics through the level of elementary algebra.
5. To represent and solve problems using mathematical techniques.
6. To interpret elementary descriptive statistics.

Critical thinking:

7. To comprehend and use concepts and ideas.
8. To develop, express, test, and evaluate ideas.
9. To analyze problems, develop solutions, and evaluate results in a clear, logical, and consistent manner.
10. To distinguish between fact and opinion; to recognize biases and fallacies in reasoning.

Computer literacy:

11. To use computer systems to achieve professional, education, and personal objectives.
12. To apply the protocols of computer use and respect the legal and other rights of individuals and organizations.

Arts and Humanities:

13. To be aware of the artistic experience in personal and cultural enrichment, growth, and communication.
14. To be aware of the nature and variety of the human experience through the methods and applications of the humanities.

Natural Sciences:

15. To understand the basic principles of scientific inquiry.
16. To have a knowledge of basic human biological principles, including those related to wellness.
17. To understand the basic principles of the natural sciences, and their relationship to the environment.

Technology:

18. To understand the basic principles and applications of technology.
19. To understand the principle of integrating technological elements into systems.
20. To understand the relationship of technology to individuals, society, and the environment.

Social Sciences:

21. To understand the methods and applications of the social sciences in exploring the dynamics of human behavior.
22. To understand those principles and values, including individual rights and civic responsibilities, which maintain and enhance democracy and freedom in a pluralistic society.
23. To have a working knowledge of the history, structure, and function of American social, political, and economic institutions.
24. To be aware of the contemporary global community, especially its geographical, cultural, economic, and historical dimensions.

Courses Meeting Core Elements 13 and 14

Throughout the following listing of programs, a frequent requirement for completion of the programs is to select a course that meets core elements 13 and 14. The following is a list of those courses. Any of these may be chosen 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	Theater Production	2
ENG 140	Horror and Science Fiction	3
ENG 160	Introduction to Literature: Poetry and Drama	3
ENG 170	Introduction to Literature: Short Story and Novel	3
ENG 181	African-American Literature	3
ENG 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 111	First Year French I	4
FRN 120	Beginning Conversational French	2
FRN 121	Intermediate Conversational French	2
FRN 122	First Year French II	4
FRN 213	Second Year French I	3
FRN 224	Second Year French II	3
GRM 111	First Year German I	4
GRM 120	Conversational German	2
GRM 121	Intermediate Conversational German	2
GRM 122	First Year German II	4
HST 160	American Film	3
HUM 101	Humanities I – Ancient to Medieval Times	3
HUM 102	Humanities II – Renaissance to Modern Times	3
HUM 140	Special Topics	3
HUM 150	International Cinema	3
HUM 160	American Film	3
HUM 170	Montreal World Film Festival	2
HUM 180	Understanding the Moving Image	3
MUS 180	Music Appreciation	3
MUS 183	Music and Culture of America and the African-American	3
MUS 206	Vocal Performance	2
PHL 120	Philosophy of Work	3
PHL 200	Existentialism	3
PHO 103	History of Photography	3
RUS 111	First Year Russian I	4
RUS 120	Conversational Russian	2
RUS 121	Intermediate Conversational Russian	2
RUS 122	First Year Russian II	4
SPN 111	First Year Spanish I	4
SPN 112	Spanish Laboratory I	1
SPN 119	Spanish Language Adventures	1
SPN 120	Beginning Conversational Spanish - Level I	2
SPN 121	Beginning Conversational Spanish - Level II	2
SPN 122	First Year Spanish II	4
SPN 123	Spanish Laboratory II	1
SPN 211	Intermediate Conversational Spanish	2
SPN 213	Second Year Spanish I	3
SPN 224	Second Year Spanish II	3

Accounting

Associate in Applied Science Degree Program: Code ACCT

Advisors: Cliff Bellers, Mark Johnston, Myron Thomas

This associate's degree program provides career training as an accounting technician. Accounting technicians perform routine duties such as those assigned to beginning accountants. For example, they verify additions; check audits, postings and vouchers; analyze accounts, and prepare financial statements. Performance of these tasks is usually under direct supervision. Objectives of the accounting program are to develop knowledge, skills and insights into the area of accounting and its relationship to the total business system and to develop techniques essential to the performance of the basic accounting supportive functions of business and industry.

Program Admission Requirements: None

Articulations:
This program has articulation agreements with EMU, Madonna and Walsh College. If you are interested in tranferring to any of these institutions, pick up a copy of the articulation agreement. Copies are available in the Placement and Transfer Center, from an Accounting faculty advisor, and in the area Dean's office. Since these agreements are updated on a regular basis, check with an advisor prior to following the curricular guide.

Course Number	Course Title	Credit Hours
First Semester		
ACC 111	Principles of Accounting I	3
BMG 140	Introduction to Business	3
CIS 110	Business Computer Systems	4
MTH[1]	Restricted Mathematics Elective (MTH 163, MTH 181 or higher)	3-4
Science[2]	Restricted Science Elective (BIO 101 or SCI 100)	1-4
		14-18
Second Semester		
ACC 122	Principles of Accounting II	3
ACC 131	Computerized Accounting	3
COM 101	Fundamentals of Speaking	3
ENG 111	Composition I	4
PLS	Restricted PLS Elective (112 or 150)	3
		16
Third Semester		
ACC 213	Intermediate Accounting	3
BMG 111	Business Law I	3
BMG 230	Supervisory Management	3
ECO 211	Principles of Economics I	3
ENG 122	Composition II	3
		15
Fourth Semester		
ACC 225	Managerial Cost Accounting	3
BMG 200	Human Relations in Business and Industry	3
BMG 207	Business Communication	3
BMG 220	Principles of Finance	3
ECO 222	Principles of Economics II	3
HUM[3]*	Restricted Humanities Elective	1-4
		16-19

Total credit hours for program: 61-68

[1] Choose MTH 181 if transferring to EMU, Madonna will accept either MTH 163 or MTH 181.
[2] Choose BIO 101 if transferring to EMU or Madonna.
3 If transferring to EMU, choose ENG 181 or ENG 214
** Choose from list of Humanities courses that meet elements 13 and 14 on page 60*

Computerized Accounting

Mastery Certificate Program: Code CAC

Advisors: Cliff Bellers, Mark Johnston

This one-year certificate program prepares students for entry level accounting positions in various businesses such as accounting and tax services, CPA firms and small businesses where part of the workload requires basic accounting skills in addition to office support. Graduates are able to operate basic software programs, to reconcile bank statements, prepare accounts receivable and accounts payable, perform data entry, prepare a simple 1040, utilize spreadsheet and graphics applications and demonstrate a basic level of skill in word processing. The program is designed for rapid entry into the workforce while maximizing the opportunity for transfer of credit into the Associate Degree Accounting Program.

Program Admission Requirements:
The following high school courses or equivalents must be completed with a grade of "C" or better:

- one semester of high school keyboarding or BOS 101, 101A or 102, or pass proficiency exam.
- one year of high school computer instruction or CIS 100 or 110, or permission of program advisor.

Course Number	Course Title	Credit Hours
First Semester		
ACC 091	Fundamentals of Accounting I or	
ACC 111*	Principles of Accounting I	3
BOS 157	Microsoft Word for Windows I or	
BOS 158	Wordperfect for Windows I	2
BOS 257	Microsoft Word for Windows II or	
BOS 258	Wordperfect for Windows II	2
ENG 111*	Composition I	4
MTH 163*	Business Mathematics or	
MTH 181*	Mathematical Analysis or Higher Mathematics Elective	3-4
		14-15
Second Semester		
ACC 131*	Computerized Accounting	3
BMG 200*	Human Relations in Business and Industry	3
BMG 207*	Business Communication	3
CIS 152	Introduction to Excel	2
TAX 101	Federal Income Tax for Individuals and Small Business	3
		14
Third Semester		
ACC 174	Accounting Co-op	3

Total credit hours for program: 31-32

** These courses are also required in the two-year Associates Degree Program in Accounting.*

Business

Business Management

Associate in Applied Science Degree Program: Code BMG

Advisors: Joseph L. Flack, Cheryl Gracie, Rosemary Wilson, Colette Young

Business Management, an Associate Degree program, provides career training in general management. It also prepares current non-managerial employees for management level responsibility in their existing job concentrations. The program provides students with knowledge and skills essential for leadership in business operations, supervision and other fundamental requirements of business administration and management. Such skills as planning, decision making, problem recognition and solution, and human resources management are discussed. Students acquire managerial skills from the study of management theory: its concepts and practices. Business communications, computer familiarization, marketing, accounting and business law are all part of the Business Management program.

Program Admission Requirements

The following high school courses or equivalents must be completed with a grade of "C" or better:

- one semester of high school keyboarding or BOS 101, 101A or 102, or pass proficiency exam.
- one year of high school computer instruction or CIS 100 or 110, or permission of program advisor.

Articulations

This program has articuation agreements with EMU's College of Business and the Industrial Distribution Program, Madonna and Walsh College. If you are interested in transferring to any of these institutions, pick up a copy of the articulation agreement. Copies are available in the Placement and Transfer Center, the Counseling Center, your faculty advisor and the area Dean's office. Since these agreements are updated on a regualr basis, check with an advisor prior to following the curricular guide.

Course Number	Course Title	Credit Hours
First Semester		
ACC 091	Fundamentals of Accounting I or	
ACC 111[1]	Principles of Accounting I	3
BMG 140	Introduction to Business	3
BMG 160	Principles of Sales	3
ENG 111	Composition I	4
MTH 163[2]	Business Mathematics or Higher Mathematics Elective	3-4
		16-17
Second Semester		
ACC 092	Fundamentals of Accounting II or	
ACC 122[1]	Principles of Accounting II	3
BMG 111	Business Law I	3
BMG 208	Principles of Management	3
CIS 110	Business Computer Systems	4
COM 101	Fundamentals of Speaking	3
ENG 122	Composition II	3
		19
Third Semester		
BMG 150	Labor-Management Relations	3
BMG 207	Business Communication	3
ECO 211	Principles of Economics I	3
PLS	Restricted PLS Elective (108, 112 or 150)	3
Science[3]	Restricted Science Elective (SCI 100 or BIO 101)	1
Business	Restricted Business Elective	2-3
		15-16
Fourth Semester		
BMG 200	Human Relations in Business and Industry	3
BMG 220	Principles of Finance	3
BMG 240	Human Resources Management	3
BMG 250	Principles of Marketing	3
ECO 222	Principles of Economics II	3
HUM*	Restricted Humanities Elective	3
		18

Total credit hours for program: 68-70

Restricted Business Electives

ACC 225	Managerial Cost Accounting	3
BMG 122	Business Law II	3
BMG 174	Business Co-op I	1-3
BMG 230	Supervisory Management	3
BMG 235	Women in Management	3
BMG 255	Marketing and Management Career Development	2

[1] If transferring, choose higher level ACC 111 and ACC 122. Courses under 100 level generally do not transfer.

[2] Choose MTH 181 if transferring to EMU, Madonna will accept MTH 163 or anything higher.

[3] Choose BIO 101 if transferring to EMU or Madonna. SCI 100 does not transfer to either institution.

[4] Choose from list of Humanities courses that meet elements 13 and 14 on page 60 or choose ENG 181 or ENG 214 if transferring to EMU.

Business Marketing

Associate in Applied Science Degree Program: Code BMKT

Advisors: Steve Ennes, Ron Zeeb

The Business Marketing program prepares students for career opportunities in the field of marketing. These positions may be in any one of the marketing activities that involves the moving of products and services from producer to consumer, including the concepts and methods marketers use to identify and solve marketing problems and identify business opportunities through target market, product, price, distribution and promotion strategies. The program emphasizes such skills as sales techniques, advertising concepts, sales management, human relations, market research, customer contact, product placement and administrative and record management. Business communications, computer familiarization, management and accounting are also stressed in this program.

Program Admission Requirements

The following high school courses or equivalents must be completed with a grade of "C" or better:

- one semester of high school keyboarding or BOS 101, 101A or 102, or pass proficiency exam.
- one year of high school computer instruction or CIS 100 or 110, or permission of program advisor.

Articulations

This program has articulation agreements with EMU's college of Business and the Industrial Distribution Program, Madonna and Walsh Colleges. If you are interested in transferring to any of these institutions, pick up a copy of the articulation agreement. Copies are available in the Placement and Transfer Center, the Counseling Center, your faculty advisor, and the area's Dean's office. Since these agreements are updated on a regular basis, check with an advisor prior to following the curricular guide.

Course Number	Course Title	Credit Hours
First Semester		
BMG 140	Introduction to Business	3
BMG 160	Principles of Sales	3
COM 101	Fundamentals of Speaking	3
ENG 111	Composition I	4
MTH 163[1]	Business Mathematics or Higher Mathematics Elective	3-4
		16-17
Second Semester		
BMG 111	Business Law I	3
BMG 250	Principles of Marketing	3
CIS 110	Business Computer Systems	4
ENG 122	Composition II	3
Science[2]	Restricted Science Elective (SCI 100 or BIO 101)	1
		14
Third Semester		
ACC 091	Fundamentals of Accounting I or	
ACC 111[3]	Principles of Accounting I	3
BMG 150	Labor Management Relations	3
BMG 200	Human Relations in Business and Industry	3
BMG 208	Principles of Management	3
ECO 211	Principles of Economics I	3
HUM[4]	Restricted Humanities Elective	3
		18
Fourth Semester		
ACC 092	Fundamentals of Accounting II or	
ACC 122[3]	Principles of Accounting II	3
BMG 207	Business Communication	3
BMG 270	Advertising Principles	3
ECO 222	Principles of Economics II	3
PLS	Restricted PLS Elective (108, 112 or 150)	3
Business	Restricted Business Elective	2-3
		17-18

Total credit hours for program: 65-70

Restricted Business Electives

BMG 122	Business Law II	3
BMG 174	Business Co-op I	1-3
BMG 230	Supervisory Management	3
BMG 235	Women in Management	3
BMG 255	Marketing/Management Career Development	2

1 Choose MTH 181 if transferring to EMU. Madonna will accept either course.
2 Choose BIO 101 if transferring to EMU. SCI 100 does not transfer to EMU or Madonna.
3 If transferring, choose higher level ACC 111 and ACC 122. Courses under 100 level generally do not transfer.
4 Choose from list of Humanities courses that meet elements 13 and 14 on page 60 or if transferring to EMU choose ENG 181 or ENG 214.

Business Sales

Mastery Certificate Program: Code BSLS

Advisors: Steve Ennes, Ron Zeeb

This Mastery Certificate program offers a wide range of beginning career opportunities primarily in the field of sales. The program provides marketing skills in sales presentation, negotiation and customer service. Additional areas of concentration include display preparation, inventory analysis and basic market research.

Program Admission Requirements

The following high school courses or equivalents must be completed with a grade of "C" or better:

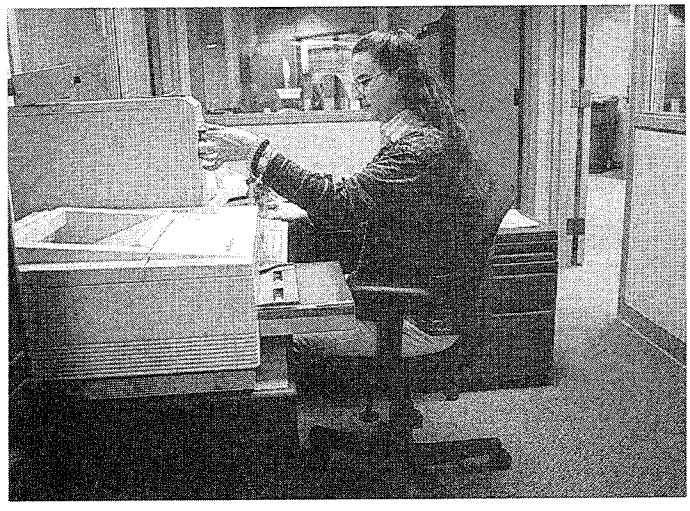
- one semester of high school keyboarding or BOS 101, 101A, or 102 or pass proficiency test.

Course Number	Course Title	Credit Hours
First Semester		
BMG 140	Introduction to Business	3
COM 101	Fundamentals of Speaking	3
ENG 100	Communication Skills or	
ENG 111	Composition I	4
MTH 163	Business Mathematics (or 169 or higher)	3-4
PSY 100	Introductory Psychology	3
		16-17
Second Semester		
ACC 091	Fundamentals of Accounting I or	
ACC 111	Principles of Accounting I	3
BMG 111	Business Law I	3
BMG 160	Principles of Sales	3
BMG 200	Human Relations in Business and Industry	3
BMG 250	Principles of Marketing	3
Business[1]	Restricted Business Elective	2-3
		17-18

Total credit hours for program: 33-35

[1]Restricted Business Electives

BMG 174	Business Co-op I	1-3
BMG 255	Marketing & Management Career Development	2
BMG 270	Advertising Principles	3
CIS 100	Introduction to Computers	3



Small Business and Entrepreneurship

Achievement Certificate Program: Code SBEA (three courses)
Advisor: Granville Lee

The Small Business and Entrepreneurship Certificate programs offer students the opportunity to explore the knowledge, skills and attitudes necessary to start, operate and manage a home-based or small business. Individuals working within a large corporate environment may also apply these skills. The Achievement Certificate provides instruction in accounting and business computer systems for the small business owner, while building the foundation for further work toward a Mastery Certificate. Competency in keyboarding is necessary to be successful in this program. Students who need to improve their keyboarding skills should take BOS 101 or BOS 101A before beginning the program.

Program Admission Requirements
1 One year of high school technical mathematics, or MTH 163, or equiva lent placement test
2 ASSET writing score of 37 or above

First Semester

ACC 111	Principles of Accounting	3
BMG 109	Introduction to Home/Small Business Management	3
CIS 110	Business Computer Systems	4
		10

Total credit hours for the Achievement Certificate: 10

Small Business and Entrepreneurship

Mastery Certificate Program Code: SBEC (two semesters)
Advisor: Granville Lee

By completing 24 - 25 credits in addition to the Achievement Certificate, students earn the Small Business and Entrepreneurship Mastery Certificate. The program offers a focused menu of proven business courses that build knowledge, skills and attitudes that enhance success in the small, home-based and family business marketplace. The program provides skills training in business plan development, marketing, operations and financial management, legal and tax preparation, and survival in a continuously changing technological global economy. Most of the courses in this program will apply toward an Associate in Applied Science Degree in Business Management or Marketing.

Program Admission Requirements
1 Students must have a plan of work approved by the program advisor.
2 One year of high school technical mathematics, or MTH 163, or equiva lent placement test
3 ASSET writing score of 37 or above

First Semester

ACC 111	Principles of Accounting	3
BMG 109	Introduction to Home/Small Business Management	3
BMG 111	Business Law I	3
CIS 110	Business Computer Systems	4
ENG/COM	Restricted English/Communications Elective (ENG 091 or higher, COM 101 or 102)	3-4
		16-17

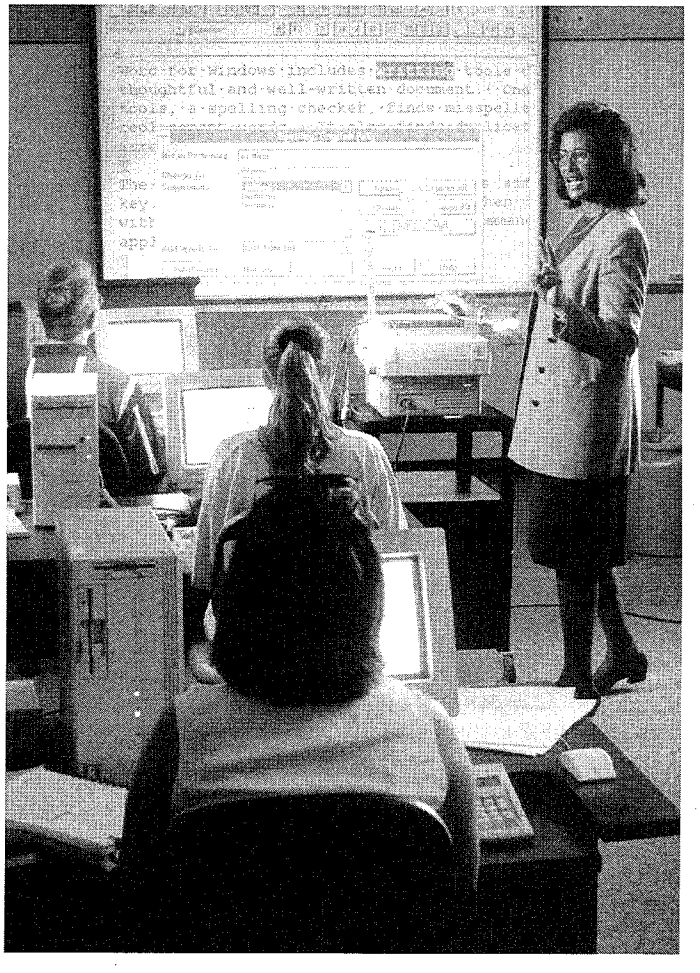
Second Semester

ACC 131	Computerized Accounting	3
BMG 174	Business Co-op Education	1
BMG 200	Human Relations in Business and Industry	3
BMG 209	Home/Small Business Management Planning	2
BMG 250	Principles of Marketing	3
*BMG	Restricted Business Elective	3
TAX 101	Federal Income Taxes for Individuals and Small Business Owners	3
		18

Total credit hours for Mastery Certificate program: 34 - 35

[1]Restricted Business Electives

BMG 100	Investments	1
BMG 122	Business Law II	3
BMG 140	Introduction to Business	3
BMG 150	Labor Management Relations	3
BMG 160	Principles of Sales	3
BMG 170	Introduction to International Business	3
BMG 208	Principles of Management	3
BMG 220	Principles of Finance	3
BMG 230	Supervisory Management	3
BMG 235	Women in Management	3
BMG 240	Human Resources Management	3
BMG 270	Advertising Principles	3
BMG 274	Business Co-op II	1-3
RES 100	Real Estate Principles and Prelicensure	4
TAX 121	Business Income Tax Basics	2



Business Office Systems

The Business Office Systems Department offers programs that are accredited by the Association of Collegiate Business Schools and Programs. There are three one-year programs leading to college certificates: Information Processing Technology, Administrative Assistant Technology and Medical Administrative Assistant Technology. These one-year programs train students for entry-level positions. For those students wishing a broader background with options for greater job opportunities, a second year of study is available in the Administrative Assistant Technology program and the Medical Administrative Assistant Technology program leading to Associate in Applied Science Degrees.

Administrative Assistant Technology

Mastery Certificate Program: Code AATC (first two semesters)

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

The mastery certificate program prepares students for information processing and administrative assistant positions. Skills required include keyboarding and document formatting using computers, communications, transcription, record management and business math applications. Job-seeking skills are also covered.

Program Admission Requirements: None

Course Number	Course Title	Credit Hours
First Semester		
BOS 101	Keyboarding and Document Formatting I	3
BOS 130	Business Machines	3
BOS 151	Information Processing Principles and Applications	4
ENG 100	Communication Skills	4
MTH 163	Business Mathematics	3
		17
Second Semester		
BOS 102	Keyboarding and Document Formatting II	3
BOS 107	Clerical Methods and Procedures	4
BOS 152	Computerized Transcription Skills	3
BOS 157	Microsoft Word for Windows I or	
BOS 158	WordPerfect for Windows I	2
BOS 206	Telecommunications Office Applications	2
BOS 257	Microsoft Word for Windows II or	
BOS 258	WordPerfect for Windows II	2
		16

Total credit hours for Mastery Certificate program: 33

Administrative Assistant Technology

Associate in Applied Science Degree Program: Code AATD (all four semesters)

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

The following year of study added to the Mastery Certificate provides a broader background in office technology. Students develop expertise in all the technical skills described in the one-year program and learn other skills, including spreadsheets and databases, desktop publishing, telecommunications, time management, human relations and accounting.

Program Admission Requirements
One year of high school computer instruction, or CIS 100, or 110, or permission of program advisor.

Course Number	Course Title	Credit Hours
(First and second semesters),		
see requirements for Mastery Certificate above		33
Third Semester		
BOS 203	Keyboarding and Document Formatting III	3
BOS 208	Desktop Publishing for the Office	3
BOS 225	Information Processing Systems and Procedures	3
PLS 112	Introduction to American Government	3
HUM*	Restricted Humanities Elective	1-4
Business[1]	Restricted Business Elective	2-4
		15-20
Fourth Semester		
ACC 091	Fundamentals of Accounting or	
ACC 111	Principles of Accounting	3
BOS 207	Introduction to Powerpoint	2
BOS 250	Administrative Office Systems and Procedures	4
CIS 152	Introduction to Excel	2
CIS 182	Introduction to MS Access	2
COM 101	Fundamentals of Speaking	3
SCI 100	Introduction to Natural Sciences	1
		17

Total credit hours for degree program: 65-70

** Choose from list of Humanities courses that meet elements 13 and 14 on page 60.*

[1]Restricted Business Electives

ACC	Any ACC class 100 or above	1-4
BMG	Any BMG class 100 or above	1-3
BOS	Any BOS class 101 or above	1-4
CIS	Any CIS class 100 or above	1-4
ECO 211	Principles of Economics	3

Information Processing Technology

Mastery Certificate Program: Code IP

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

This one-year certificate program trains students for electronic office support positions of moderate difficulty. Skills covered include keyboarding and document formatting, information processing functions, business math applications, record-keeping, communication skills, computerized transcription and word processing.

Program Admission Requirements: None

Course Number	Course Title	Credit Hours
First Semester		
BOS 101	Keyboarding and Document Formatting I	3
BOS 130	Business Machines	3
BOS 151	Information Processing Principles and Applications	4
ENG 100	Communication Skills	4
MTH 163	Business Mathematics	3
		17
Second Semester		
BOS 102	Keyboarding & Document Formatting II	3
BOS 107	Clerical Methods and Procedures	4
BOS 152	Computerized Transcription Skills	3
BOS 157	Microsoft Word for Windows I or	
BOS 158	WordPerfect for Windows I	2
BOS 257	Microsoft Word for Windows II or	
BOS 258	WordPerfect for Windows II	2
		14

Total credit hours for program: 31

Medical Administrative Assistant Technology

Mastery Certificate Program: Code MATC (first two semesters)

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

The one-year, two-semester certificate program provides students with skills for preparing, analyzing and retrieving health information. The program trains for entry-level positions in a doctor's office, a clinic, a hospital, a pharmaceutical or insurance company, or a public health facility. In addition to the duties of secretary and receptionist, medical administrative assistants prepare medical charts and reports, bill patients, work with insurance companies, and may carry out such technical duties as sterilizing instruments or taking temperatures.

Program Admission Requirements: None

Course Number	Course Title	Credit Hours
First Semester		
BIO 102	Human Biology or	
BIO 111	Anatomy and Physiology	4-5
BOS 101	Keyboarding and Document Formatting I	3
BOS 151	Information Processing Principles and Applications	4
HSC 101	Healthcare Terminology	1
HSC 113	Introduction to Medical Science	2
		14-15
Second Semester		
BOS 102	Keyboarding and Document Formatting II	3
BOS 157	Microsoft Word for Windows I or	
BOS 158	WordPerfect for Windows I	2
BOS 257	Microsoft Word for Windows II or	
BOS 258	WordPerfect for Windows II	2
BOS 223	Medical Office Procedures	3
ENG 100	Communication Skills	4
HSC 115	Medical Office and Laboratory Procedures	3
		17

Total credit hours for certificate program: 31-32

Medical Administrative Assistant Technology

Associate in Applied Science Degree Program: Code MATD (all four semesters)

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

Program Admission Requirements: None

The following additional year of study provides a broader background for students and equips them to consider options for greater job opportunities such as assistant office manager. The completion of this additional year leads to an Associate in Applied Science Degree.

Course Number	Course Title	Credit Hours
(First and second semesters), see requirements for Mastery Certificate above		31-32
Third Semester		
BOS 107	Clerical Methods and Procedures	4
BOS 130	Business Machines	3
BOS 210	Medical Transcription	3
BOS 225	Information Processing Systems and Procedures	3
MTH 163	Business Mathematics	3
		16
Fourth Semester		
BOS 203	Keyboarding and Document Formatting III	3
BOS 250	Administrative Office Systems and Procedures	4
COM 101	Fundamentals of Speaking	3
PLS 112	Introduction to American Government	3
HUM*	Restricted Humanities Elective	1-4
Individual[1]	Restricted Individual Elective	2-4
		16-21

Total credit hours for degree program: 63-69

**Choose from list of Humanities courses that meet elements 13 and 14 on page 60.*

[1]Restricted Individual Electives

ACC	Any ACC class 100 or above	1-4
BMG	Any BMG class 100 or above	1-4
BOS	Any BOS class 101 or above	1-4
CIS	Any CIS class 100 or above	1-4
PSY 100	Introductory Psychology	1-4

Professional Office Systems

Achievement Certificate Program: Code POSC

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

This is a short-term program designed to prepare students for entry-level employment in business offices. This program will also give students a foundation to continue their course work to develop further skills and competencies in one of the Business Office Systems degree programs. The student develops skills in keyboarding, information processes, and written communication.

Program Admission Requirements: None

Course Number	Course Title	Credit Hours
First Semester		
BOS 101	Keyboarding and Document Formatting I	3
BOS 151	Information Processes Principles and Applications	4
ENG 100	Communication Skills	4
		11

Total credit hours for certificate program: 11

Computer Instruction

Business Computer Programming

Associate in Applied Science Degree Program: Code BCP

Advisors: Charles Finkbeiner, Usha Jindal, Laurence Krieg, Roland Meade, John Rinn

This Associate Degree program is intended to prepare students for entry-level or trainee computer programmer positions. Graduates work in an applications environment to support general, administrative and organizational information processing functions of industry, commerce, business and government service. Graduates are trained to work with a systems analyst in the programming environment.

Program Admission Requirements
One year of high school computer instruction, or CIS 100 with a grade of "C" or better; or permission of program advisor.

Course Number	Course Title	Credit Hours
First Semester (Fall)		
ACC 111	Principles of Accounting I	3
CIS 110	Business Computer Systems	4
ENG	Restricted ENG Requirement (100, 107 or 111)	3-4
MTH	Restricted MTH Elective (169, 179, or 181)	4
SCI 100	Intro to Natural Sciences	1
		15-16
Second Semester (Winter)		
ACC 122	Principles of Accounting II	3
CPS 171	Intro to Programming C++	4
ENG	Restricted ENG Elective (107, 122 or 208)	3
PLS 112	Introduction to American Government	3
HUM*	Restricted Humanities Elective	1-4
		14-17
Third Semester (Spring/Summer)		
BMG 200	Human Relations in Business and Industry	3
COM 101	Fundamentals of Speaking	3
		6
Fourth Semester (Fall)		
CPS 271	Object Features of C++	4
CIS 286	UNIX Systems Administration	4
CIS 288	Systems Analysis and Design	3
CIS/CPS[1]	Restricted CIS/CPS Elective	4
		15
Fifth Semester (Winter)		
BMG	Restricted BMG Elective (150, 208, 230, 235, or 240)	3
CIS 238	PC Assembly Language	3
CIS 240	Career Practices Seminar	2
CIS 282	Small System Data Base	3
CPS 272	Data Structures With C++	4
		15

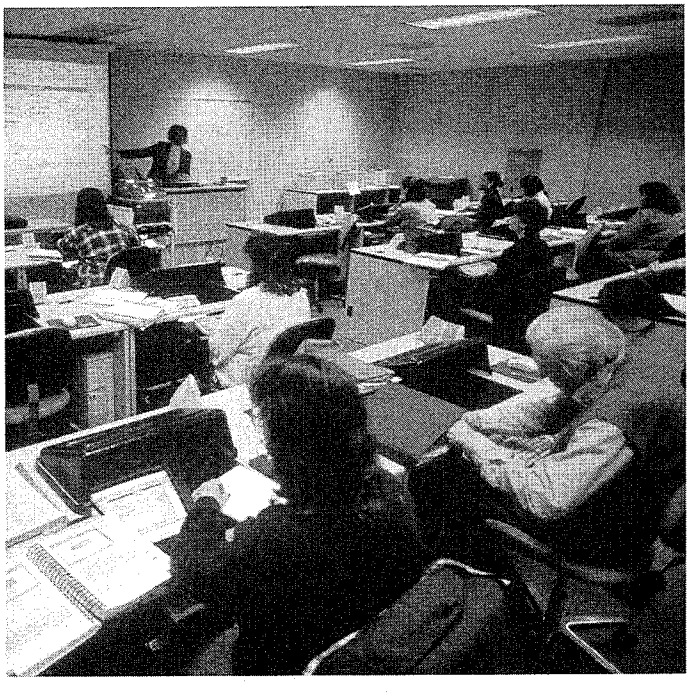
Total credit hours for program: 65-69

** Choose from list of Humanities courses that meet elements 13 and 14 on page 60.*

[1]Restricted CIS/CPS Electives

CIS 118	MS DOS for Technicians	2
CIS 121	Beginning UNIX	2
CIS 125	Local Area Networks I	2
CIS 160	Exploring the Internet	2
CIS 174	CIS Co-op I	1-3
CIS 221	UNIX Tools and Scripts	2
CIS 225	Local Area Networks II	2
CIS 260	Web Site Management	2
CIS 265	Programming the Web	3
CIS 275	C Programming Language	4
CPS 185	Intro to Visual Basic	4
CPS 285	Advanced Visual Basic Programming	4
CPS 290	Object-Oriented Programming	4
CPS 293	Visual C++ Windows Programming	4

(If students choose an elective other than those listed above, they must complete a substitution form. See an advisor for details.)



Computer Systems Technology

Mastery Certificate Program: Code CSTC

Advisors: Gary Downen, Laurence Krieg, Catherine Wagner, Philip Mullins, John Rinn

This certificate program trains individuals for employment as microcomputer service technicians. The program thoroughly prepares the student to pass the rigorous Computing Technology Industry Association's (CompTIA) A+ Certification exam. The program covers core hardware skills including configuring, installing, diagnosing, repairing, upgrading and maintaining personal computers, storage media and essential peripherals. In addition, basic operating systems (MS DOS and MS Windows and Macintosh OS) are covered in depth. Customer relations skills are also emphasized.

Program Admission Requirements

One year of high school computer instruction in Windows Operating System with a grade of "C" or better, or CIS 116 and CIS 117, or permission of Program Advisor

Course Number	Course Title	Credit Hours
First Semester (Fall)		
CIS 110	Business Computer Systems	4
CIS 118	DOS for Technicians	2
CIS 125	Local Area Networks 1	2
ELE 150	PC Hardware Concepts and Troubleshooting	4
ENG/COM[1]	Restricted ENG/COM Elective	3-4
		15-16
Second Semester (Winter)		
CIS 121	Beginning UNIX	2
CIS 160	Exploring the Internet	2
CIS 225	Local Area Networks II	2
ELE 155	Advanced Computer Concepts and Troubleshooting	4
ELE 216A	Modem Installation and Configuration	2
ELE 225A	Network Installation and Troubleshooting	2
ELE 299	Customer Relations (or ELE 174 - ELE Co-Op I)	1
		15

Total credit hours for program: 30-31

[1]Restricted ENG/COM Electives

COM 101	Fundamentals of Speaking	3
COM 102	Interpersonal Communication	3
ENG 100	Communication Skills	4
ENG 107	Technical Communications	4
ENG 111	Composition I	4
ENG 122	Composition II	3

Microcomputer System Support

Associate in Applied Science Degree Program: Code MSS

Advisors: Charles Finkbeiner, Usha Jindal, Laurence Krieg, Roland Meade, John Rinn

This is an Associate Degree program designed to meet the special needs of expanding microcomputer applications in business. Students who complete this program will be as skilled with people as they are with machines. They will support the computer end user in hardware and software matters. They will analyze user need and identify and implement the use of application packages for business and managerial functions.

Program Admission Requirements

The following high school courses or equivalents must be completed with a grade of "C" or better:

- one semester of high school keyboarding, or BOS 101A, or proficiency test at 30 wpm.
- one year of high school computer instruction in Windows Operating System, or CIS 116 and 117, or permission of program advisor.

Course Number	Course Title	Credit Hours
First Semester (Fall)		
ACC 111	Principles of Accounting I	3
CIS 110	Business Computer Systems	4
ENG	Restricted ENG Elective (100 or 111)	4
MTH	Restricted MTH Elective (163, 169, 179 or 181)	3-4
		14-15
Second Semester (Winter)		
BOS 157	Word Processing Microsoft Word for Windows or	
BOS 158	Word Processing Wordperfect for Windows	2
CPS 171	Intro to Programming with C++ or	
CPS 185	Intro to Visual Basic	4
ENG	Restricted ENG Elective (107, 122, or 208)	3
CIS 118	MS DOS for Technicians	2
CIS 152	Intro to Excel	2
HUM*	Restricted Humanities Elective	1-4
		14-17
Third Semester (Spring /Summer)		
BMG 200	Human Relations in Business and Technology or	
PSY 100	Introduction to Psychology	3
COM 101	Fundamentals of Speaking	3
		6
Fourth Semester (Fall)		
ELE 150	PC Hardware Concepts and Troubleshooting	4
CIS 125	Local Area Networks I	2
CIS 240	Career Practices Seminar	2
CIS 288	Systems Analysis and Design	3
SCI 100	Intro to Science	1
Individual[1]	Restricted Elective	3-4
		15-16

Fifth Semester (Winter)

BMG	Restricted BMG Elective (150, 208, 215, 230, 235, or 240)	3
CIS 282	Small System Data Base	3
CIS 290	Microcomputer Business Technology	4
PLS 112	Introduction to American Government or	
PLS 150	State and Local Government	3
Individual [1]	Restricted Elective	3-4
		16-17

Total credit hours for program: 65-71

** Choose from list of Humanities courses that meet elements 13 and 14 on page 60.*

[1]Restricted Individual Electives

CIS 121	Beginning UNIX	2
CIS 160	Exploring the Internet	2
CIS 174	CIS Co-op Ed I	1-3
CIS 182	Introduction to Microsoft Access	2
CIS 221	UNIX Tools & Scripts	2
CIS 225	Local Area Networks II	2
CIS 238	PC Assembly Language	3
CIS 260	Web Site Management	2
CIS 265	Programming the Web	3
CIS 265A	HTML Short Course	1
CIS 286	UNIX Systems Administration	4
COM 102	Interpersonal Communication	3
ELE 216A	Modem Hardware Installation, Configuration & Troubleshooting	2
ELE 216B	Data Communications Hardware Standards, Configuration and Troubleshooting	2

(If students choose an elective other than those listed above, they must complete a substitution form. See an advisor for details.)

Culinary and Hospitality Management

Culinary Arts

Associate in Applied Science Degree Program: Code CUL

Advisors: Jill Beauchamp, Don Garrett, Paul McPherson

This program provides career training as a culinary arts technician. This technician supervises and coordinates activities of workers engaged in preparing, cooking and serving food, cleaning premises and washing dishware. He/she also plans varied menus to insure that food is appetizing and nutritionally suitable; estimates daily or weekly needs and orders food supplies and equipment; keeps records of meals served and takes inventory of supplies and equipment. The technician may participate in preparing and cooking meals and/or may choose to assume responsibilities in the front of the house (supervising food service and dining room employees). This technician may also choose to enter the field of food and equipment wholesale and retail.

Program Admission Requirements: None

Course Number	Course Title	Credit Hours

First Semester (Fall)

CUL 100	Introduction to Hospitality Management	3
CUL 110	Sanitation and Hygiene	3
CUL 111	Elementary Food Preparation	6
MTH	Restricted MTH Elective (090, 097, 151, 152, or 163)	3-4
		15-16

Second Semester (Winter)

CUL 150*	Food Service Management	6
CUL 210	Garde Manger	4
CUL 224	Principles of Cost Control	3
CIS 100	Intro to Computers	3
		16

Third Semester (Spring/Summer)

CUL 228	Layout and Equipment	4
ENG	Restricted ENG Elective (100, 107, 111, or 122)	3-4
		7-8

Fourth Semester (Fall)

ART 130	Art Appreciation	3
CUL 118	Principles of Nutrition	3
CUL 219	Baking and Pastries	4
CUL 230*	Quality Food Production	3
CUL 231*	A La Carte Kitchen	3
		16

Fifth Semester (Winter)

CUL 220	Organization and Management of Food Systems	3
CUL 225	Advanced Baking and Pastries	4
HRM 174	HRM Co-op Education I	1-3
PLS 112	Introduction to American Government	3
Science[1]	Restricted Science Elective	1-4
		12-17

Sixth Semester (Spring/Summer)

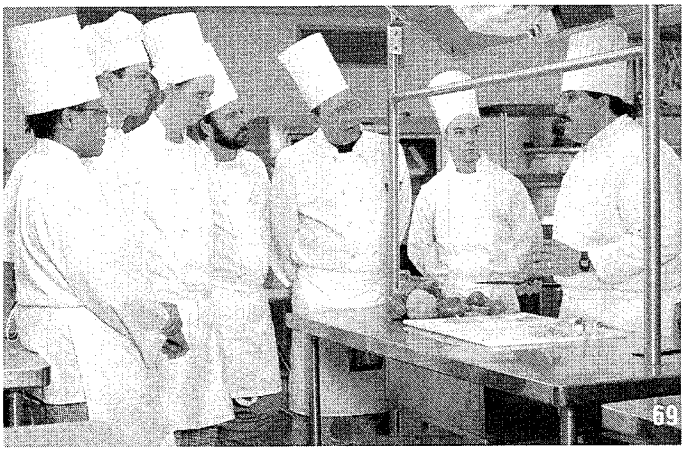
CUL 227	Advanced Culinary Techniques or	
CUL 250	Advanced Service Techniques	3-4

Total credit hours for program: 69-77

** These courses may be taken in the following order:*
CUL 111 may be taken in the first or second semester.
CUL 150 may be taken in the first, second or fourth semester.
CUL 230 and CUL 231 may be taken in the second or fourth semester as long as CUL 111 is taken first.

[1]Restricted Science Electives

AST 100	Intro to Astronomy	1
AST 111	General Astronomy	3
BIO 101	Concepts of Biology	4
BIO 102	Human Biology	4
BIO 227	Zoology	4
BIO 228	Botany	4
GEO 100	Geography and Environment	3
GLG 100	Introduction to Earth Science	4
PHY 105	Conceptual Physics	4
SCI 100	Introduction to Natural Science	1



Food Production Specialty

Mastery Certificate Program: Code FPS

Advisors: Jill Beauchamp, Don Garrett, Paul McPherson

This program provides training as a food production specialist. The specialist works in preparing foods for hotels, restaurants and institutional establishments. Production includes sauteing, roasting, broiling, baking, vegetable preparation and producing soups and sauces. The specialist is trained to perform all receiving, storage and sanitation functions within the food service establishment.

Program Admission Requirements: None

Course Number	Course Title	Credit Hours
First Semester (Fall)		
CUL 100	Introduction to Hospitality Management	3
CUL 110	Sanitation and Hygiene	3
CUL 111	Elementary Food Preparation	6
MTH	Restricted MTH Elective (090 or above)	3-4
		15-16
Second Semester (Winter)		
CUL 150	Food Service Management	6
CUL 210	Garde Manger or	
CUL 219	Baking and Pastries	4
CUL 230	Quantity Food Production	3
CUL 231	A la Carte Kitchen	3
		16
Third Semester (Spring/Summer)		
CUL 227	Advanced Culinary Techniques or	
CUL 250	Advanced Service Techniques	3-4
ENG	Restricted ENG Elective (ENG 091, 100, 107, or 111)	3-4
		6-8

Total credit hours for program: 37-40

Hotel-Restaurant Management

Associate in Applied Science Degree Program: Code HRM

Advisors: Jill Beauchamp, Don Garrett, Paul McPherson

This program prepares students for supervisory and/or mid-management positions in the hospitality industry. Hotel Restaurant Managers are responsible for satisfying the guest as well as operating the establishment profitably. They direct the production and/or service in the kitchen, dining room and front office. Department managers work as a team to direct the flow of hospitality services within the hotel or restaurant.

Program Admission Requirements

Mathematics competency at MTH 062 level or permission of Program Advisor

Course Number	Course Title	Credit Hours
First Semester (Fall)		
CUL 100	Introduction to Hospitality Management	3
CUL 110	Sanitation and Hygiene	3
CUL 111*	Elementary Food Preparation or	
CUL 150*	Food Service Management	6
MTH	Restricted MTH Elective (090, 097, 151, 152, or 163)	3-4
		15-16
Second Semester (Winter)		
COM 101	Fundamentals of Speaking	3
CUL 111*	Elementary Food Preparation or	
CUL 150*	Food Service Management	6
CUL 224	Principles of Cost Control	3
HRM 104	Front Office Procedures	3
		15
Third Semester (Spring/Summer)		
CUL 250	Advanced Service Techniques	3
ENG	Restricted ENG Requirement (ENG 100, 107, 111, or 122)	3-4
		6-7
Fourth Semester (Fall)		
CIS	Restricted CIS Elective (100 or 110)	3-4
CUL 230*	Quantity Food Production	3
CUL 231*	A la Carte Kitchen	3
HRM 222	Lodging, Marketing and Promotion	3
PLS 112	Introduction to American Government	3
		15-16
Fifth Semester (Winter)		
ACC	Restricted ACC Elective (091 or above)	3
BMG 111	Business Law I	3
CUL 118	Principles of Nutrition	3
CUL 220	Organization and Management of Food Systems	3
HRM 174	HRM Co-op Education I	2-3
		14-15
Sixth Semester (Spring/Summer)		
ART 130	Art Appreciation	3
Science[1]	Restricted Science Elective	1-4
		4-7

Total credit hours for program: 69-76

** These courses may be taken in the following order:*
CUL 111 may be taken in the first or second semester.
CUL 150 may be taken in the first, second or fourth semester.
CUL 230 and CUL 231 may be taken in the second or fourth semester as long as CUL 111 is taken first.

[1]Restricted Science Electives

AST 100	Intro to Astronomy	1
AST 111	General Astronomy	3
BIO 101	Concepts of Biology	4
BIO 102	Human Biology	4
BIO 227	Zoology	4
BIO 228	Botany	4
GEO 100	Geography and Environment	3
GLG 100	Introduction to Earth Science	4
PHY 105	Conceptual Physics	4
SCI 100	Introduction to Natural Science	1

Dental Assisting

Mastery Certificate Program: Code DAC

Advisors: Betty Finkbeiner, Claudia Johnson

The Dental Assisting Program offers career training in dental assisting. There are two types of dental assistants: the Certified Dental Assistant (CDA) and the Registered Dental Assistant (RDA). The CDA assists in the treatment of patients and actively participates in all functions of dentistry. An examination from the Dental Assistant National Board must be passed to attain this credential. In the State of Michigan, the RDA is qualified to perform specified intra-oral functions normally performed by the dentist, such as placement and removal of rubber dams, placement and removal of temporary crowns and oral inspection. A Michigan State Board of Dentistry examination must be passed to attain this credential. Both assistants are qualified to work in a variety of settings such a private dental offices, dental schools, the Armed Forces, dental insurance companies and many others. Successful completion of courses in dental radiography also meet the Michigan State Board of Dentistry requirement for either of these assistants to legally expose dental radiographs.

A student may enroll in this program in either a traditional (two year) or an accelerated (one year) mode. Both modes lead to Certification, Registration and a Certificate in Dental Assisting. The Dental Assisting Department offers advanced standing in this program for on-the-job trained dental assistants with two years full time employment. The Alternative Dental Assistant Education Project (ADAEP) requires validation of skills by successful completion of the Dental Assisting National Board examination (DANB) prior to admission.

Applying for Admission to the Dental Assisting Program

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

1. Complete and submit an application for Admission to the Dental Assisting program;
2. Date of application to the program;
3. Washtenaw County residency;
4. Remaining applicants will be placed on a wait list and be issued a priority number. Admission to future programs will be based on the priority number received.

Program Admission Requirements

1. Applicants must possess a valid high school diploma or G.E.D.
2. It is strongly recommended that applicants also 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 semester of high school keyboarding or BOS 101A or equivalent course
3. 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 admissions packet, which can be obtained from the Admissions Office. 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).

Criteria for Continuing Program Eligibility

1. 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.
2. Students must successfully complete a keyboarding or computer course equivalent to BOS 101A (Keyboarding) prior to enrolling in DEN 212 (Dental Practice Management).
3. A current CPR card is required prior to enrolling in DEN 130 A.
4. All studnets must demonstrate proficiency in the English language prior to placement in clinical courses.

Course Number	Course Title	Credit Hours
First Semester		
DEN 102	Infection Control	1
DEN 106	Biomedical Science for Dental Assisting	2
DEN 107	Oral Anatomy	2
DEN 108	Principles of Dental Radiography	1
DEN 109	Oral Hygiene	1
DEN 110	Basic Clinical Dental Assisting	4
DEN 112	Dental Materials	4
		15
Second Semester		
DEN 119	Dental Nutrition	1
DEN 120	Oral Diagnosis Theory	1
DEN 128	Radiography Practicum	1
DEN 129	Oral Pathology and Dental Therapeutics	2
DEN 130A	Oral Diagnosis Practicum I	½
DEN 130B	Oral Diagnosis Practicum II	½
DEN 131	Principles of Dental Specialties	4
ENG/COM[1]	Restricted English/Communication Elective	3-4
		13 - 14
Third Semester		
DEN 202	Advanced Clinical Practice	3
DEN 204	Advanced Functions	3
DEN 212	Dental Practice Management	4
		10

Total credit hours for program: 38-39

[1]Restricted English/Communication Electives

COM 101	Fundamentals of Speaking	3
COM 102	Interpersonal Communication	3
ENG 091	Writing Fundamentals	4
ENG 100	Communication Skills	4
ENG 107	Technical Communications	3
ENG 111	Composition I	4
ENG 122	Composition II	3

Nursing

The Nursing Program at Washtenaw Community College is a five-semester Associate of Applied Science degree program that prepares students for RN licensure. The curriculum is designed to permit easy career mobility. Licensed practical nurses (LPNs) are accepted as advanced standing students, receiving credit for their practical nurse education. In addition, the nursing curriculum is designed to permit easy articulation with area RN-BSN completion programs.

Applying for Admission to the Nursing Program

A limited number of students are accepted into the Nursing Program each year. Students are selected once a year following an application

period for each academic year (fall and winter semesters). Admission to WCC's Associate of Applied Science - Nursing Program is based on:

1. Completion and submission of an application for Admission to the Nursing program during the specified time period.
2. Completion of prerequisites (see below for specific courses).
3. Cumulative GPA of courses required for the Associate of Applied Science - Nursing Program.
4. Overall cumulative high school GPA or college GPA if 12 or more credits have been completed.
5. Related health care activities.
6. Residency status (Washtenaw County residents are given priority status.)

Students not admitted to a specific class are encouraged to reapply for the next admissions cycle.

Program Admission Requirements

1. Proof of high school graduation or GED certificate.
2. Applicants must complete the following high school courses or equivalent WCC courses with a grade of "B" or better:
   - one year of high school biology or BIO 101 (Concepts of Biology)
   - one year of high school algebra or MTH 097
   - one year of high school chemistry or CEM 057 and 058 (Introductory Chemistry/Laboratory)
3. Applicants must successfully pass the preadmission math test with a minimum score of 85% (to be scheduled after the completion of 1 and 2).
4. 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 admissions packet, which can be obtained from the Admissions Office. WCC reserves the right to request that students successfully demonstrate the specific cognitive and physical abilities related to the Nursing program.

Criteria for Continuing Program Eligibility

1. 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.
2. Support courses (marked with a "*") may be taken prior to admission to the nursing sequence, but not later than the scheduled semester. Enrollment in HSC 220 (Pathophysiology) or HSC 244 (Health Care Ethics) prior to admission to the program is open only to those students with prior nursing or health care experience.
3. Students are required to adhere to rules of the Nursing Code of Ethics published in the Nursing Program Student Handbook. Students should be aware 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.
4. Students in the Nursing Program will be required to purchase special uniforms and supplies throughout the duration of the program.
5. All students must demonstrate proficiency in the English language prior to placement in clinical courses.

Provisions for Advanced Standing Students (LPNs)

Provisions are made for licensed practical nurses (LPNs) to enter the Nursing Program with advanced standing status. Based upon evaluation of Practical Nursing or other college transcripts, credit may be granted for some courses in the program.

Application Procedures for Advanced Standing LPNs Only

LPNs must follow the same admissions procedures as other students applying to the Nursing program (see above), with the addition of the following:

1. Submit transcripts for evaluation of transfer credits.
2. An individualized course of study must be approved by a committee of Nursing faculty before admission is granted.

Prerequisites for LPN Advanced Standing

1. Graduate of a Practical Nursing program
2. Applicants must complete the following high school courses or equivalent WCC courses with a grade of "B" or better:
   - one year of high school biology or BIO 101 (Concepts of Biology)
   - one year of high school algebra or MTH 097
   - one year of high school chemistry or CEM 057 and 058 (Introductory Chemistry/Laboratory)
3. Completion of a pharmacology course equivalent to NUR 112, Pharmacology II, with a grade of "C" or higher.
4. Current LPN license *
5. Minimum of one year full-time employment as an LPN within the last three years or the equivalent in part-time experience.*
6. Successfully pass the preadmission math test with a minimum score of 85%.
7. 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 admissions packet, which can be obtained from the Admissions Office. WCC reserves the right to request that students successfully demonstrate the specific cognitive and physical abilities related to the Nursing program.

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

Registered Nursing Preparation

Associate in Applied Science Degree Program: Code NURS

Advisors: Barbara Goodkin, Sherry Lee, Theresa Nestorak, Maxine Moulton, Judith Pawloski, Judith VanderVeen, Gloria Velarde

This Associate Degree program provides preparation for the registered nursing licensure examination. Associate Degree Registered Nurses work in both hospitals and nursing homes. They care for people with many kinds of health problems, but they work primarily in acute care. This care involves complicated, technical equipment; it also takes a knowledgeable, skilled and kind person with good manual dexterity. Acute care nurses often have to make quick decisions. Alertness and energy are essential.

Course Number	Course Title	Credit Hours
First Semester		
BIO 111*	Anatomy and Physiology	5
ENG*	English Elective (100 or 111)	4
HSC 147*	Growth and Development	4
NUR 101	Introduction to Nursing	1
NUR 104	Nursing of the Older Adult	1
NUR 105	Nursing of the Older Adult - Clinical Practice	1
NUR 111	Pharmacology I	1
		17
Second Semester		
BIO 147*	Hospital Microbiology (BIO 237 may be substituted and will transfer to 4 year institutions)	1
CIS 101*	Basic Computer Skills for Hospital Professionals	2
HSC 118*	General Nutrition	2
NUR 102	Fundamentals of Nursing	2
NUR 103	Fundamentals of Nursing - Clinical Practice	3
NUR 112	Pharmacology II	2
		12
Third Semester		
HSC 128	Therapeutic Nutrition	1
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 Practice	2
		15
Fourth Semester		
HSC 244	Medical Ethics	2
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
		15
Fifth Semester		
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 Practice	4
PLS *	Political Science Requirement (PLS 112, 150 or 211)	3
		13

Total credit hours for program: 72

** These courses may be taken before program entry.*

Nursing Transfer

Associate in Science Degree Program: Code NURT

Advisors: Peggy Eckhauser, Gloria Velarde

The transfer track of the Nursing Program is designed for students who wish to transfer to the University of Michigan to complete the Bachelor of Science in Nursing degree. Students must meet the admission requirements of both WCC and U-M. Students who complete this program earn an Associate in Science degree and fulfill requirements of the Nursing Program Articulation Agreement between WCC and the University of Michigan School of Nursing. While at WCC students do not complete nursing requirements for licensure. They are eligible for registered nurse (RN) licensures on completion of the University of Michigan program. Other requirements for transferring to the University of Michigan School of Nursing are included in the articulation agreement, which may be obtained from the Placement and Transfer Center or the Health Occupation Advisor. Students who wish to transfer to nursing programs at other senior colleges or universities should check with an advisor or counselor at that institution to insure the transferability of courses.

Program Admission Requirements

Students applying to the transfer nursing program must meet the admission requirements of both WCC and U-M School of Nursing. Students must have a minimum high school GPA of 3.4 with SAT scores above 1000 or an ACT composite score above 21. They must have earned B's in all high school science courses.

High school work:
3 units of English
3 units of Math
2 units of laboratory science, including chemistry and biology
4 units of foreign language and/or social science and/or laboratory science
4 units of other academic courses.

Criteria for Continuing Program Eligibility

This transfer program is designed for full time students. WCC students must demonstrate the ability to carry a full time load of courses by maintaining a minimum full time load of courses with a 3.0 GPA in at least two terms in the 12 months prior to transfer to U-M School of Nursing. Each of these two terms must include a transferable science and one clinical course.

Articulation

This program is designed to articulate with the University of Michigan School of Nursing. See program description above. Students wishing to transfer to other four-year institutions' nursing programs should see a counselor or advisor.

Course Number	Course Title	Credit Hours
Fall Semester		
CEM 105	Fundamentals of Chemistry or	
CEM 111	General Chemistry	4
CIS 101	Basic Computer Skills for Hospital Professionals	2
ENG 111	English Composition I	4
Liberal Arts[1]	Restricted Liberal Arts Elective	3
SOC 100	Principles of Sociology	3
		16
Winter Semester		
BIO 237	Microbiology	4
CEM 140	Organic Biochemistry	4
NUR 205	Introduction to Professional Nursing	3
PSY 100	Introductory Psychology	3
		14
Fall Semester		
BIO 111	Anatomy and Physiology	5
HSC 147	Growth and Development	4
NURS215*	Nursing Research at U-M	3
NUR 222	Health Assessment	4
		16
Winter Semester		
HSC 220	Pathophysiology	4
HUM[2]	Restricted Humanities/Cultural Elective	3
NUR 102	Fundamentals of Nursing	2
NUR 103	Fundamentals of Nursing - Clinical Practice	3
NUR 112	Pharmacology II	2
		14

Total credit hours for program: 60

[1]Restricted Liberal Arts Electives

COM 130	Introduction to Mass Communications	3
ENG 211	American Literature I	3
ENG 222	American Literature II	3
HST 160	American Film	3
HST 200	Michigan History	3
HST 201	United States History to 1877	3
HST 202	United States History Since 1877	3
PHL 205	Ethics	3
PLS 112	Introduction to American Government	3

[2]Restricted Humanities/Cultural Electives

ANT 201	Introduction to Cultural Anthropology	3
ART 143	Art and Culture of Afro-America	3
ENG 181	African American Literature	3
MUS 183	Music and Culture of Africa and the African-American	3

*Students in this program are required to dual enroll in the Univerisity of Michigan's School of Nursing course NURS 215. Please speak with a program advisor for more information.

Pharmacy Technology

Mastery Certificate Program: Code PHT

Advisor: Suzette Ripepe

The Pharmacy Technology program combines classroom instruction with lab work and clinical experience to prepare students for technician jobs. The pharmacy technician works under the supervision of registered pharmacists in hospitals, health care agencies and retail outlets such as drugstores.

Applying for Admission to the Pharmacy Technology Program

A limited number of students are accepted into 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:

1. Complete and submit an application for Admission to the Pharmacy Technology program
2. Completion of all pre-entry courses
3. Date of application to the program
4. Washtenaw County residency
5. Remaining applicants will be placed on a wait list and be issued a priority number. Admission to the program in future years will be based on the priority number received.

Program Admission Requirements

1. 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 054, 090, 097 or 165
   - one year of high school chemistry or CEM 057 and 058 (Introductory Chemistry/Laboratory)
2. 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 admissions packet, which can be obtained from the Admissions Office. WCC reserves the right to request that students successfully demonstrate the specific cognitive and physical abilities related to the Pharmacy Technology program.

Criteria for Continuing Program Eligibility

Program courses are sequential and complemented with appropriate support courses. Student must obtain a grade of "C" or better in all first semester courses to progress to the second semester, and in all courses in order to graduate from this program. Students must possess a valid high school diploma or G.E.D. by the end of the program and in order to sit for the National Pharmacy Technician Certification Exam.

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

1. Completion of a satisfactory physical exam documented on 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 exam must be completed within three (3) months of the start of the clinical rotation and turned in to the Department Chair four (4) weeks before the start of the clinical rotation.
2. Proof of health insurance.
3. All students must demonstrate proficiency in the English language prior to placement in clinical courses.

Course Number	Course Title	Credit Hours

First Semester

CIS*	Restricted CIS Elective (100 or 110)	3-4
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
		14-15

Second Semester

COM 102*	Interpersonal Communication	3
ENG*	Restricted English Elective (091, 100 or 111)	4
PHT 140	Pharmacy Prescription Processing	2
PHT 150	Pharmacy Operations and Compounding	3
PHT 198	Pharmacy Experience	4
		16

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

Total credit hours for program: 30 - 31

Public Services

Child Care

Associate in Applied Science Degree Program: Code CC

Advisor: Sally Adler

This program provides career training as a child-care worker. The child-care worker organizes and leads activity of pre-kindergarten children in nursery schools or in playrooms operated for patrons of such places as drop-in centers, hotels, educational institutions and day care centers; organizes and participates in games; reads to children; teaches simple painting, drawing, handiwork, songs and similar activities; directs children in eating, resting and toileting; helps children develop habits of caring for their own clothing, picking up and putting away toys and books; maintains discipline; may serve meals and refreshments to children and regulate rest periods; is involved in helping to meet needs of parents in child rearing.

Program Admission Requirement: none

Course Number	Course Title	Credit Hours

First Semester

CCW 101*	Child Development	3
CCW 113	Health, Safety and Nutrition	3
COM 101	Fundamentals of Speaking or	
COM 102	Interpersonal Communication	3
ENG 111	Composition I	4
HSC 131	CPR, FPR, and First Aid	1
SOC 205	Race and Ethnic Relations or	
SOC 230	Marriage and Family	3
		17

Second Semester

CCW 108	Expressive Arts for Young Children	3
CCW 109	Language and Communication	3
CCW 110	Social/Emotional Development	3
CCW 118**	Beginning Child Care	1
CCW 119**	Beginning Child Care Practicum	2
ENG 240	Children's Literature	3
HUM[1]	Restricted Humanities Elective	1-4
		16-19

Third Semester

CCW 100	The Exceptional Child	3
CCW 103	Alternative Programs in Child Care	3
CCW 107	Educational Experiences in Science and Math	3
CIS 100	Introduction to Computers	3
MTH 090	Occupational Math	3
Science[2]	Restricted Science Elective	1-4
		16-19

Fourth Semester

CCW 111	Administration of Child Care Programs	3
CCW 200	Staff/Parent Interpersonal Relations	3
CCW 218***	Advanced Child Care Seminar	1
CCW 219***	Advanced Child Care Practicum	2
PLS 150	State and Local Government	3
Individual[3]	Restricted Individual Elective	3
		15

Total credit hours for program: 64-70

**CCW 101 is pre-requisite or co-requisite for taking any other CCW course.*
***CCW 174 (3 credits) may be substituted for CCW 118 and 119.*
****CCW 274 (3 credits) may be substituted for CCW 218 and 219.*

[1]Restricted Humanities Electives

ANT 201	Introduction to Cultural Anthropology	3
ART 130	Art Appreciation	3
ART 143	Art and Culture of Afro-America	3
DAN 110	Afro-American Dance I	1
ENG 140, 160, 170, 181, 200, 211, 212, 213	(see course descriptions for titles)	3
FRN 111	First Year French I	4
GRM 111	First Year German I	4
HUM 101, 102, 150 (see course descriptions for titles)		3
MUS 180, 183 (see course descriptions for titles)		3
PHO 103	History of Photography	3
RUS 111	First Year Russian I	4
SPN 111	First Year Spanish I	4

[2]Restricted Science Electives

AST 100	Introductory Astronomy	1
AST 111	General Astronomy	3
BIO 101	Concepts of Biology	4
BIO 102	Human Biology	4
GLG 100	Introduction to Earth Science	3
PHY 105	Conceptual Physics	4
SCI 100	Intro to Natural Sciences	1

[3]Restricted Individual Electives (consult with advisor before selecting)

CCW 116	Seminar in Infant Care	3
ECO 111	Consumer Economics	3
PSY 100	Introductory Psychology	3
SOC 100	Principles of Sociology	3
SOC 207	Social Problems	3

Correctional Science

Mastery Certificate Program: Code CORC (first two semesters)

Advisor: Ruth Walsh

Five corrections courses are required by the State of Michigan for employment in a corrections facility. These courses are: Introduction to Corrections (COR 122), Correctional Institutions/Facilities (COR 132), Legal Issues in Corrections (COR 211), Client Relations in Corrections (COR 219) and The Correctional Client: Growth and Development (COR 228). Upon completion of the Mastery Certificate, students are prepared to take entry-level exams at both the county and state levels. Both a certificate and an associate degree program are offered. Individuals employed in the correctional field are assisted in career advancement. Field trips to correctional facilities are included in the program. This program is certified by the Michigan Corrections Officers Training Council.

Program Admission Requirement: None

Course Number	Course Title	Credit Hours
First Semester		
COR 122	Introduction to Corrections	3
COR 132	Correctional Institutions	3
ENG	English Elective (100 or 208)	3-4
PSY	Psychology Elective (100, 107, 130, 200, 209, or 257)	3
SOC 100	Principles of Sociology	3
		15-16
Second Semester		
CJT 120	Criminal Justice Ethics	2
COR 211	Legal Issues in Corrections	3
COR 219	Client Relations in Corrections	3
COR 228	The Correctional Client: Growth and Development	3
Science	Restricted Science Elective (BIO 101, BIO 102, or SCI 100)	1-4
HUM[1]	Restricted Humanities Elective	3-4
		15-19

Total credit hours for certificate: 30-35

Correctional Science

Associate in Arts Degree Program: Code COR (all four semesters)

Advisor: Ruth Walsh

Program Admission Requirement: none

Course Number	Course Title	Credit Hours
First and Second Semester	see requirements for the Mastery Certificate	
Third Semester		
CJT 100	Introduction to Criminal Justice	3
MTH 090	Occupational Math	3
PSY	Restricted Psychology Elective (100, 107, 130, 200, 209, or 257)	3
SOC 202	Criminology or	
SOC 250	Juvenile Delinquency	3
Individual[2]	Restricted Individual Elective	3
		15
Fourth Semester		
CIS 100	Introduction to Computers	3
CJT 225	Seminar in Criminal Justice	3
PSY	Restricted Psychology Elective (100, 107, 130, 200, 209, or 257)	3
SOC	Restricted Sociology Electives (choose two) (202, 205, 207, 250, or CJT 223)	6
		15

Total credit hours for degree: 60-65

[1]Restricted Humanities Electives

ANT 201	Introduction to Cultural Anthropology	3
ART 130	Art Appreciation	3
ART 143	Art and Culture of Afro-America	3
ENG 140, 160, 170, 181, 200, 223, 224	(see course descriptions for titles)	3
FRN 111	First Year French I	4
GRM 111	First Year German I	4
HUM 101, 150	(see course descriptions for titles)	3
MUS 180, 183	(see course descriptions for titles)	3
PHO 103	History of Photography	3
RUS 111	First Year Russian I	4
SPN 111	First Year Spanish I	4

[2]Restricted Individual Electives (consult with advisor before selecting)

BMG 230	Supervisory Management	3
CJT 199	Criminal Justice On the Job Training	1-3
CJT 223	Juvenile Justice	3
ECO 111	Consumer Economics	3
HUM 101	Introduction to Humanities	3
PHL 101	Introduction to Philosophy	3
PSY 100 or higher		3
SOC 202, 205, 207, 250	(see course descriptions for titles)	3

Criminal Justice

Associate in Arts Degree Program: Code CJ

Advisors: Hank Townsend, Ruth Walsh

This program provides career training as a criminal justice technician. Upon completion of the program, students have the groundwork to further their studies toward a bachelor's degree in criminal justice. In addition, graduates may be employed in such fields as police work, probation and parole and juvenile work. Studies involve a combination of sociological theory and pragmatic application which is required of all those in the criminal justice system. Law enforcement, police and community relations, psychology and other aspects of criminal law are also studied.

Program Admission Requirements: none

Articulations

This program is articulated with EMU's Criminology and Criminal Justice Program. If you are interested in transferring to this institution, pick up a copy of the articulation agreement in the Placement and Transfer Center, from your faculty advisor or from the area Dean's office. Since these agreements are updated on a regular basis, check with an advisor prior to following the curricular guide.

Course Number	Course Title	Credit Hours
First Semester		
CIS 100	Introduction to Computers	3
CJT 100	Introduction to Criminal Justice	3
CJT 120	Criminal Justice Ethics	2
ENG 111	Composition I	4
SOC 100	Principles of Sociology	3
		15
Second Semester		
CJT 111	Police/Community Relations	3
CJT 205	Applied Psychology for Police	3
COR 122	Introduction to Corrections	3
PSY	Restricted PSY Elective (100, 107, 130, 200, 209, or 257)	3
SOC 250 / CJT 223	Juvenile Delinquency or Juvenile Justice	3
		15
Third Semester		
CJT 208	Criminal Evidence and Procedure	3
CJT 224	Criminal Investigation	3
MTH 090	Occupational Math	3
SOC 202	Criminology	3
HUM[1]	Restricted Humanities Elective	3-4
Science[2]	Restricted Science Elective	1-3
		16-19
Fourth Semester		
CJT 209	Criminal Law	3
CJT 225	Seminar in Criminal Justice	3
PSY	Restricted Psychology Elective (100 107, 130, 200, 209, or 257)	3
SOC	Restricted Sociology Elective (SOC 150, 201, 203, 205, 207, or 250)	3
Individual[3]	Restricted Individual Elective	3-4
		15-16

Total credit hours for program: 61-65

[1] Restricted Humanities Electives

ART 130	Art Appreciation	3
FRN 111	First Year French	4
GRM 111	First Year German	4
HUM 101	Intro to Humanities I	3
MUS 180	Music Appreciation	3
SPN 111	First Year Spanish	4

[2] Restricted Science Electives

AST 100, 111	(see course descriptions for titles)	1-3
BIO 101, 102	(see course descriptions for titles)	4
GLG 100	Introduction to Earth Science	3
PHY 105	Conceptual Physics	4
SCI 100	Introduction to Natural Sciences	1

[3] Restricted Individual Electives (consult with advisor before selecting)

BMG 230	Supervisory Management	3
CJT 199	Criminal Justice On the Job Training	1-3
ECO 111	Consumer Economics	3
HUM 101	Introduction to Humanities I	3
PHL 101	Introduction to Philosophy	3

Criminal Justice — Law Enforcement Certification

Associate in Applied Science Degree Program: Code CJLE

Advisor: Ruth Walsh

This program is designed for students who wish to become certified by the State of Michigan for employment in law enforcement. Students entering this program are required to complete the academic program prior to entering the police academy component of the program. Admission to the police academy portion 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 an associate degree in the Criminal Justice Technician Program, but will not be certified for employment. Students admitted to the Police Academy are required to purchase certain items such as gym clothes, khaki uniforms, textbooks and other supplies. In addition to the general code of conduct, academy students are required to adhere to additional rules of behavior and discipline.

Program Admission Requirements: none

Course Number	Course Title	Credit Hours
First Semester		
CJT 100	Introduction to Criminal Justice	3
CJT 120	Criminal Justice Ethics	2
ENG	Restricted English Requirement (100 or 111)	4
PSY 100	Introduction to Psychology	3
SOC 100	Principles of Sociology	3
		15
Second Semester		
COM 101	Fundamentals of Speaking	3
PEA 102	Cardiovascular Training	1
PEA 105	Nautilus Weight Training	2
		6
Third Semester		
CIS 100	Introduction to Computers	3
CJT 111	Police/Community Relations	3
CJT 205	Applied Psychology for Police or	
PSY 257	Abnormal Psychology	3
CJT 223	Juvenile Justice or	
SOC 250	Juvenile Delinquency	3
SOC 202	Criminology	3
		15
Fourth Semester		
CJT 122	Introduction to Corrections	3
CJT 209	Criminal Law	3
MTH 090	Occupational Math	3
SCI 100	Intro to Natural Sciences	1
HUM 101	Intro to Humanities I or	
SPN 111	First Year Spanish I	3-4
		13-14
Fifth Semester		
CJT 221	Law Enforcement Training	16

Total credit hours for program: 65-66

Radiography

Associate in Applied Science Degree Program: Code RAD

Advisors: Gerald Baker, Connie Foster

The Radiography Program provides career training as a radiographer. This medical specialist is concerned with the proper operation of x-ray equipment and the preparation of patients for various types of diagnostic procedures. Upon the physician's request, the radiographer exposes x-ray films to produce radiographs of internal body parts. These radiographs may reveal evidence of disease, injury, or other significant medical information. The radiographer adjusts x-ray equipment to correct settings for each examination; positions the patient; determines proper voltage, current and desired exposure time for each radiograph; makes sure that equipment is in proper working order; works with the physician on procedures requiring radio-opaque mixtures which are administered to the patient so that internal organs may be clearly identified on exposed x-ray film; and may be required to operate mobile x-ray equipment at the patient's bedside or in the operating room.

Applying for Admission to the Radiography Program

A limited number of students are accepted into 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:

1. Complete and submit an application for Admission to the Radiography program;
2. Completion of all pre-entry courses by January 1 (see below for specific courses);
3. Washtenaw County residency;
4. Date of application to the program;
5. Remaining applicants will be placed on a wait list, and be issued a priority number. Admission to future programs will be based on the priority number received.

Program Admission Requirements

1. Applicants must possess a valid high school diploma or G.E.D.
2. 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)
   - one year of high school chemistry of CEM 057 and 058 (Introductory Chemistry)
3. 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 admissions packet, which can be obtained from the Admissions Office. WCC reserves the right to request that students successfully demonstrate the specific cognitive and physical abilities related to the Radiography program.
4. It is strongly advised that students take BIO 111 (Anatomy & Physiology) before entering the Radiography Program.

Criteria for Continuing Program Eligibility

1. Students must pass a physical examination taken at their own expense not more that three months before enrolling in clinical education courses.
2. Students must maintain personal health coverage.
3. 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).
4. Program courses are sequential and complemented with appropriate support courses. All Radiography courses must be completed with a

grade of "C" or better in order to graduate from this program.
5. All students must demonstrate proficiency in the English language prior to placement in clinical courses.

Articulations

This program is articulated with EMU's Health Administration Program. If you are interested in transferring into this program at EMU, pick up a copy of the articulation agreement in the Placement and Transfer Center, or from a Radiography faculty advisor, or the area Dean's office. Most of the program courses will transfer under this agreement, but some course substitutions will need to be made.

Course Number	Course Title	Credit Hours

First Year

First Semester (Summer)

MTH 116	Radiographic Calculations	2
RAD 100	Introduction to Radiography	2
RAD 101	Methods in Patient Care	2
		6

Second Semester (Fall)

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
		17

Third Semester (Winter)

ENG 111*	Composition I	4
RAD 120	Clinical Education	2
RAD 123	Radiographic Positioning II	2
RAD 125	Radiologic Procedures and Related Anatomy	3
RAD 127	Principles of Radiographic Exposure Laboratory	1
		12

Fourth Semester (Spring/Summer)

RAD 150	Clinical Education	4
PLS 112	Introduction to American Government	3
		7

Second Year

Fifth Semester (Fall)

CIS 101*	Basic Computers for Hospital Professionals	2
RAD 215	Radiography of the Skull	2
RAD 217	Clinical Education	3
RAD 218	Radiation Biology and Protection	4
		11

Sixth Semester (Winter)

RAD 135	Pathology for Radiographers	2
RAD 200	Physical Foundations of Radiology	3
RAD 220	Management of Rad. Environment	2
RAD 225	Clinical Education	3
RAD 280	Radiographic Critique	2
HUM[1]	Restricted Humanities Elective	3-4
		15-16

Seventh Semester (Spring/Summer)

RAD 240	Clinical Education	2

Total credit hours for program: 70-71

** These courses may be taken before acceptance and/or entry into the Radiography program.*

[1] Restricted Humanities Electives

ART 130	Art Appreciation	3
FRN 111	First Year French	4
GRM 111	First Year German	4
HUM 101	Intro to Humanities I	3
MUS 180	Music Appreciation	3
SPN 111	First Year Spanish	4

Respiratory Therapy

Associate in Applied Science Degree Program: Code RTH

Advisors: Mimi Norwood, Martin Redick

This Associate Degree (or technician transfer) program provides career training as a respiratory therapist. Respiratory therapists treat persons with respiratory problems. This treatment may range from giving temporary relief to patients with chronic asthma or emphysema, to giving emergency care to victims of heart failure, stroke, drowning, or shock. They are among the first medical specialists called for emergency treatment of acute respiratory conditions arising from head injury or drug poisoning. They follow doctors' orders and use special equipment such as respirators and positive-pressure breathing machines to administer gas therapy, aerosol therapy, and other treatment involving respiration. They work mainly in hospital intensive care units with critically ill patients.

This program is conducted in cooperation with: St. Joseph Mercy Hospital; University Hospital; The University of Michigan Medical Center; Veterans Administration Hospital, Ann Arbor; Beyer Memorial Hospital, Ypsilanti; Annapolis Hospital, Wayne; Heritage Hospital, Taylor; and Children's Hospital of Michigan, Detroit.

Applying for Admission to the Respiratory Therapy Program

Forty-eight students are accepted into the Respiratory Therapy Program each year. Application packets may be picked up from the WCC Office of Admissions. Applicants will be screened based on the following criteria:

1. Complete and submit an application for Admission to the Respiratory Therapy program;
2. Completion of all pre-entry courses;
3. Date of application to the program;
4. Washtenaw County Residency;
5. Remaining applicants will be placed on a wait list and be issued a priority number. Admission to the program in future years will be based on the priority number received.

Program Admission Requirements

1. Applicants must possess a valid high school diploma or G.E.D.
2. 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)
- one year of high school chemistry or CEM 057 and 058 (Introductory Chemistry/Laboratory).

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

Criteria for Continuing Program Eligibility

1. 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.
2. All students must demonstrate proficiency in the English language prior to placement in clinical courses.

Articulations

This program is articulated with EMU's Health Administration Program. If you are interested in transferring into this program at EMU, pick up a copy of the articulation agreement in the Placement and Transfer Center, or from a Respiratory Therapy faculty advisor, or the area Dean's office. Most of the program courses will transfer under this agreement, but some substitutions will need to be made.

Fall Admission

Course Number	Course Title	Credit Hours
First Semester (Fall)		
BIO 111*	Anatomy and Physiology	5
HSC 101*	Healthcare Terminology	1
RTH 101	Electrocardiography	1
RTH 120	Introduction to Respiratory Therapy	3
RTH 121	Basic Equipment & Procedures	4
		14
Second Semester (Winter)		
CIS 100*	Introduction to Computers	3
RTH 122	Respiratory Physiology	3
RTH 123	Respiratory Pathophysiology	3
RTH 148	Pharmacology for Respiratory Therapists	2
RTH 198	General Clinical Practice I	1.5
		12.5
Third Semester (Spring/Summer)		
ENG 100*	Communication Skills or	
ENG 111*[1]	Composition I	4
Fourth Semester (Fall)		
HSC 220*	Pathophysiology	4
RTH 199	General Clinical Practice II	3
RTH 212	Ventilators	5
		12
Fifth Semester (Winter)		
PSY 100*[2]	Introductory Psychology or	
SOC 100*	Principles of Sociology	3
RTH 200	Advanced Clinical Practice	4
RTH 214	Cardiodiagnostics	3
RTH 219	Pediatric Respiratory Therapy	3
RTH 222	Pulmonary Function Testing	1
		14
Sixth Semester (Spring/Summer)		
RTH 201	Specialty Clinical Practice	2
Seventh Semester (Fall)		
HUM 101*[3]	Introduction to Humanities I or	
HUM 102*	Introduction to Humanities II	3
PLS 112	Introduction to American Government	3
RTH 202	Pediatric Clinical Practice	2
RTH 217	Seminar in Respiratory Therapy	2
RTH 221	Pulmonary Rehabilitation	1
		11

Total credit hours for program: 69.5

** These courses may be taken before acceptance and/or entry into the Respiratory Therapy program.*

Winter Admission

Course Number	Course Title	Credit Hours
First Semester (Winter)		
BIO 111*	Anatomy and Physiology	5
HSC 101*	Healthcare Terminology	1
RTH 101	Electrocardiography	1
RTH 120	Introduction to Respiratory Therapy	3
RTH 121	Basic Equipment & Procedures	4
		14
Second Semester (Spring/Summer)		
RTH 198	General Clinical Practice I	1.5
Third Semester (Fall)		
CIS 100*	Introduction to Computers	3
HSC 220*	Pathophysiology	4
RTH 122	Respiratory Physiology	3
RTH 123	Respiratory Pathophysiology	3
		13
Fourth Semester (Winter)		
ENG 100*	Communication Skills or	
ENG 111*[1]	Composition I	4
RTH 199	General Clinical Practice II	3
RTH 212	Ventilators	5
		12
Fifth Semester (Spring/Summer)		
RTH 200	Advanced Clinical Practice	4
Sixth Semester (Fall)		
PSY 100*[2]	Introductory Psychology or	
SOC 100*	Principles of Sociology	3
RTH 214	Cardiodiagnostics	3
RTH 219	Pediatric Respiratory Therapy	3
RTH 222	Pulmonary Function Testing	1
		10
Seventh Semester (Winter)		
HUM 101*[3]	Introduction to Humanities I or	
HUM 102*	Introduction to Humanities II	3
PLS 112*	Introduction to American Government	3
RTH 201	Specialty Clinical Practice	2
RTH 202	Pediatric Clinical Practice	2
RTH 217	Seminar - Respiratory Therapy	2
RTH 221	Pulmonary Rehabilitation	1
		13

Total credit hours for program: 69.5

** These courses may be taken before acceptance and/or entry into the Respiratory Therapy program.*
These footnotes refer to the articulation agreement with EMU's Health Administration program.
1. Choose ENG 111 if transferring to EMU
2. Choose PSY 100 if transferring to EMU
3. Chosse HUM 101 if transferring to EMU

Surgical Technology

Mastery Certificate Program: Code SURC

Advisor: Vivian Murphy

Surgical Technology is a one-year certificate program that prepares students for employment as surgical technologists. The program also prepares students for the national certifying examination. Surgical technologists work primarily in the operating room performing functions and tasks that provide for a safe environment for surgical care, contribute to the efficiency of the operating room team and support the operative surgeons and others involved in operative procedures.

Applying for Admission to the Surgical Technology Program

A limited number of applicants are admitted to the Surgical 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:

1. Complete and submit an application for Admission to the Surgical Technology program;
2. Completion of all pre-entry courses;
3. Date of application to the program;
4. Washtenaw County Residency;
5. Remaining applicants will be placed on a wait list, and be issued a priority number. Admission to the program in future years will be based on the priority number received.

Program Admission Requirements

1. Applicants must possess a valid high school diploma or G.E.D.
2. 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 054, 090, 097, or 165
   - one year of high school chemistry or CEM 057 and 058 (Introductory Chemistry/Laboratory)
3. Admission to the Surgical Technology Program is contingent upon students declaring that they have specific physical and cognitive abilities. These requirements are detailed in the Surgical Technology Program admissions packet, which can be obtained from the Admissions Office. WCC reserves the right to request that students successfully demonstrate the specific cognitive and physical abilities related to the Surgical Technology program.

Criteria for Continuing Program Eligibility

1. 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.
2. All students must demonstrate proficiency in the English language prior to placement in clinical courses.

Course Number	Course Title	Credit Hours
First Semester (Fall)		
BIO 111	Anatomy and Physiology	5
BIO 237	Microbiology	4
HSC 101	Healthcare Terminology	1
SUR 100	Surgical Technology I	3
		13
Second Semester (Winter)		
COM 102	Interpersonal Communication	3
ENG	Restricted ENG Elective (100 or 111)	4
SUR 120	Surgical Technology II Theory	3
SUR 125	Surgical Technology II Lab/Clinical	3
SUR 140	Surgical Technology Pharmacology	2
		15
Third Semester (Spring/Summer)		
SUR 150	Surgical Technology III Theory	3
SUR 155	Surgical Technology III Practice	4
		7

Total credit hours for program: 35

Division of Humanities and Social Sciences Programs

Human Services

Associate in Applied Science Degree Program: Code HUMS

Advisors: Nan Holmes and Chris Siehl

Human services workers can be employed in a variety of capacities. They can work as substance abuse aides, case aides, community workers, neighborhood aides, hospice aides, or social services aides. They help people cope with problems by working with them on a person-to-person basis or in groups. Their work locale may be in either the public or private sector, such as in a school, rehabilitation center, mental health clinic, or community center.

Program Admission Requirement: None

Course Number	Course Title	Credit Hours
First Semester (Fall)		
BIO 102	Human Biology	4
ENG 111	Composition I	4
HSW 100	Introduction to Human Services	3
PSY 100	Introduction to Psychology	3
		14
Second Semester (Winter)		
CIS 100	Introduction to Computers	3
COM	Restricted Communications Elective (COM 101 or 102)	3
HSW 200	Introduction to Interviewing and Assessment Techniques	3
MTH 090	Occupational Mathematics	3
SOC 100	Principles of Sociology	3
HUM*	Restricted Humanities Elective	3
		18
Third Semester (Fall)		
HSW 210	Behavior Modification	3
HSW 230	Field Internship and Seminar I	3
PSY 130	Alcoholism: Its Effects and Impact	3
PLS 112	Introduction to American Government or	
SOC 205	Race and Ethnic Relations	3
SOC	Restricted Sociology Elective (150, 201, 202, 203, or 250)	3
		15
Fourth Semester (Winter)		
HSW 220	Helping Approaches for Groups	3
HSW 232	Field Internship and Seminar II	3
PSY 257	Abnormal Psychology	3
PSY	Restricted Psychology Elective (107, 200, 209, 260)	3
SOC 207	Social Problems	3
		15

Total credit hours for program: 62

**Choose from list of Humanities courses that meet elements 13 and 14 on page 60.*

Human Services Transfer

Assiciate in Arts Degree Program: Code HUST

Advisors: Nan Holmes and Chris Siehl

The transfer track of the Human Services Program is designed for students who wish to transfer to a senior-level college to complete a bachelor's degree in social work. All Human Services courses required in the base program are included in the transfer track so students in this track will also be prepared for immediate career entry as a human services worker. Support course requirements have been modified to meet the MACRAO general education requirement for a bachelor's degree. Students who complete this program will earn an Associate in Arts degree and fulfill the course requirements of the Human Services Program Articulation Agreement between WCC and Eastern Michigan University. Students wishing to transfer to EMU should refer to the articulation agreement for other requirements. Students wishing to transfer to other 4-year institutions should check with an advisor to confirm the transferabililty of courses to the desired institution.

Program Admission Requirement:
One year of high school algebra or MTH 097

Articulations

This program has an articulation agreement with EMU. If you are interested in transferring to EMU, pick up a copy of the articulation agreement from the Placement and Transfer Center, from a Human Services faculty advisor, or in the area Dean's office. Students wishing to transfer to another four-year institution should seek the advice of an advisor or counselor.

Course Number	Course Title	Credit Hours
First Semester (Fall)		
CIS 100	Introduction to Computers	3
ENG 111	Composition I	4
HSW 100	Introduction to Human Services	3
HUM[1]	Restricted Humanities Elective	3
PSY 100	Introduction to Psychology	3
		16
Second Semester (Winter)		
ENG 122	Compostition II	3
HSC 147	Growth and Development	4
HSW 200	Interviewing and Assessment	3
HUM[1]	Restricted Humanities Elective	3
SOC 100	Principles of Sociology	2
		16
Third Semester (Fall)		
ENG 181	African American Literature	3
HSW 210	Behavior Modification	3
HSW 230	Field Internship and Seminar I	3
MTH 160	Basic Statistics	4
PSY 257	Abnormal Psychology	3
		16

Fourth Semester (Winter)

BIO	Restricted Biology Elective (BIO 101 or BIO 102)	4
COM	Restricted Communication Elective (COM 102 or ENG 225)	3
HSW 220	Helping Approaches for Groups	3
HSW 232	Field Internship and Seminar II	3
SOC 205	Race and Ethnic Relations	3
SWRK 251[2]	Self Assessment and Development for Social Work at EMU (optional)	0-1
		16-17

Total credit hours for program: 64-65

[1]Restricted Humanities Electives

ART 130	Art Appreciation	3
ENG 160	Introduction to Literature: Poetry and Drama	3
ENG 170	Introduction to Literature Short Story and Novel	3
ENG 200	Shakespeare	3
ENG 211	American Literature I	3
ENG 212	English Literature I	3
ENG 213	World Literature I	3
ENG 224	World Literature II	3
FRN/SPN 111	First Year French/Spanish	4
FRN/SPN 120	Beginning Conversational French/Spanish	2
FRN/SPN 122	First Year French/Spanish II	4
FRN/SPN 213	Second Year French/Spanish I	3
FRN/SPN 214	Second Year French/Spanish II	3
HUM 101	Introduction to Humanities I	3
HUM 150	International Cinema	3
MUS 180	Music Appreciation	3
MUS 183	Music and Culture of Africa and the African-American	3
PHL 200	Existentialism	3

[2] Students transferring to EMU are encouraged to take SWRK 251 at EMU during the final year at WCC. See an advisor or counselor for information on the WCC/EMU dual enrollment agreement.

Liberal Arts Transfer — Humanities/ Social Science Option

Associate in Arts Degree Program: Code LAHS

Advisors: Rosalyn Biederman, Ruth Hatcher, Maija Kibens, Tracy Komarmy, Mike Kollen, Randy LaHote

This Liberal Arts program of study is designed to provide a broad base of skills and methods with which to acquire knowledge. The program is intended for students planning to transfer to a baccalaureate degree-granting institution. The program also provides for the intellectual, cultural and personal development of individuals. Programs may differ slightly from college to college. Please see a counselor or advisor to get specific course equivalencies for your college and program.

Program Admission Requirements:
The following high school courses or equivalents should be completed with a grade of "C" or better:
— one year or high school algebra or MTH 097
— Writing proficiency at college level

Articulations
Students planning to transfer to a four year institution should discuss transferability of courses with an advisor or counselor at the transfer institution.

Graduation Requirements:

A. Communication/Language, at least 13 credit hours
(required courses)

COM 101	Fundamentals of Speaking	3
ENG 111	Composition I	4
ENG 122	Composition II	3

(select one)

COM 102	Interpersonal Communication	3
ENG 225	Advanced Communication I	3
Language[1]	French, German,Russian, or Spanish (111 or 122)	4

[1]If a foreign language is selected, it is recommended that a second semester of the same foreign language is selected for the humanities requirement (see Section F).

B. Mathematics, at least 4 credit hours
(select one)

MTH 160	Basic Statistics	4
MTH 181	Mathematical Analysis I	4
MTH 182	Mathematical Analysis II	4
MTH 191	Calculus I	5
MTH 197	Linear Algebra	4

C. Computer Literacy, at least 3 credit hours
(select one)

CIS 100	Introduction to Computers	3
CIS 110	Business Computer Systems	4
CPS 171	Introduction to Programming with C++	4

D. Science, at least 8 credit hours (select one)

CEM 105	Fundamentals of Chemistry	4
CEM 111	General Chemistry I	4
CEM 140	Organic Biochemistry	4
GLG 114	Physical Geology	4
PHY 111	General Physics I	4
PHY 211	Analytical Physics I	5

(select one)

BIO 101	Concepts of Biology	4
BIO 102	Human Biology	4
BIO 103	General Biology II	4
BIO 111	Anatomy and Physiology	5

E. Social Science, 18 credit hours
(required courses)

PLS 112	Introduction to American Government	3
PSY 100	Introduction to Psychology	3
SOC 100	Principles of Sociology	3

(select a sequence)

HST 121	Western Civilization to 1500 and	
HST 122	Western Civilizations: The Early Modern World from 1300 to 1815	6
	or	
HST 201	U.S. History to 1877 and	
HST 202	U.S. History Since 1877	6

(select one)

ANT 201	Introduction to Cultural Anthropology	3
ANT 202	Introduction to Physical Anthropology	3
ECO 211	Principles of Economics I	3
ECO 222	Principles of Economics II	3
SOC 205	Race and Ethnic Relations	3

F. Humanities, at least 15 credit hours
Select two courses from area 1, one course from area 2, and one course from area 3, and an additional course from any one of the three areas.

1. Literature/Foreign Languages (select two)

COM 142	Oral Interpretation of Lit	3
ENG 160	Introduction to Lit: Poetry and Drama	3
ENG 170	Introduction to Lit: Short Story and 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
Language	FRN/GER/RUS/SPN (122, 213 or 224)	3

[2] It is recommended that students take both 111 and 122 of their selected foreign language to complete the full year of foreign language required by many 4-year colleges. Check the college to which you are transferring for specific requirements.

2. Philosophy/Religion
(select one)

HUM 145	Comparative Religions	3
PHL 101	Introduction to Philosophy	3
PHL 200	Existentialism	3
PHL 205	Ethics	3
PHL 250	Logic	3

3. Arts and Humanities
(select one)

ART 101	Drawing and Painting	3
ART 111	Basic Drawing I	4
ART 112	Basic Design I	4
ART 130	Art Appreciation	3
DRA 152	Acting for Theatre	3
HUM 101	Introduction to Humanities I	3
HUM 102	Introduction to Humanities II	3
MUS 180	Music Appreciation	3

Total credit hours for program: 61

Scientific and Technical Communication

Associate in Applied Science Degree Program: Code STC

Advisor: Dan Minock

This associate degree program is designed to provide career training as a technical writer. In the current market setting, a technical writer must be able to convey scientific and technical information precisely, accurately and clearly. Work settings for technical writers can be many and varied. Businesses and government use technical writers to explain new technologies and translate complex materials and concepts into clear and easy-to-understand terms. A technical writer must be computer-literate. This program is designed so that students can specialize in a specific area of technical writing. For each semester, students should select an elective from their chosen specialty.

Program Admission Requirements
One year of high school algebra, or MTH 097, or equivalent placement test One year of high school Macintosh computer instruction or GDT 105 or permission of program advisor

Course Number	Course Title	Credit Hours
First Semester		
CIS	Restricted CIS Elective (CIS 100 or CIS 110)	4
ENG 100	Communication Skills	4
GDT 117	Introduction to PageMaker	2
MTH 160	Basic Statistics	4
Specialty[2]	Approved Specialty Courses	3
		17
Second Semester		
ENG 107	Technical Communications	3
GDT 118	Advanced PageMaker	2
HUM[1]	Restricted Humanities Elective	3
Specialty[2]	Approved Specialty Courses	7
		15
Third Semester		
BIO 101	Concepts of Biology	4
COM 101	Fundamentals of Speaking	3
ENG 208	Advanced Technical Communications	3
Specialty[2]	Approved Specialty Courses	6
		16
Fourth Semester		
ENG 209	Award-Winning Documents	3
ENG 245	Career Practices	2
PLS 112	Introduction to American Government	3
Specialty[2]	Approved Specialty Courses	7
		14

Total credit hours for program: 62

[1]Restricted Humanities Electives
(see course descriptions for titles)

ART	130, 143
ENG	140, 160, 170, 181, 200, 211, 212, 213, 222, 223, 224
HUM	101, 102
MUS 180	Music Appreciation

[2]Approved Specialty Courses
Students must meet with the program advisor to choose a specialty area and select appropriate courses. Twenty-two credits from the disciplines listed below must be approved by the program advisor.

Business Electives may be chosen from the disciplines of:
Accounting — ACC
Business — BMG and/or RES
Computer Instruction — CIS and/or CPS
Culinary and Hospitality Management — CUL and/or HRM
Business Office Systems — BOS

Technical Electives may be chosen from the disciplines of:
Automotive Service — ABR and/or ASV
Computer Instruction — CIS and/or CPS
Drafting — ARC, and/or IND
Electricity/Electronics — ELE, EET
Industrial Technology — FLP, ROB, MET, MTT and/or NCT
Visual Arts Technology — DPP, GDT and/or PHO
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

Computer Science Transfer

Associate in Science Degree Program: Code CST

Advisors: Janet Remen, Marty Showalter

Students who complete this program are awarded an Associate in Science Degree. Students planning to transfer to a four-year institution should check with that school to verify that the following courses will transfer.

Program Admission Requirements

1. High school Precalculus or MTH 179
2. High school Physics or PHY 105
3. One year of high school computer instruction or CIS 100, or CIS 110

Articulations

Students planning to transfer to a four-year institution should discuss transferability with an advisor or counselor.

Course Number	Course Title	Credit Hours
First Semester (Fall)		
CPS 171	Introduction to Programming with C++	4
ENG 111	Composition I	4
HUM*	Restricted Humanities Elective	3
MTH 191	Calculus I	5
		16
Second Semester (Winter)		
CPS 271	Object Features of C++	4
MTH 192	Calculus II	4
PHY 211	Analytical Physics I	5
PSY 100	Introductory Psychology	3
		16
Third Semester (Fall)		
CPS 272	Data Structures with C++	4
MTH 293	Calculus III	4
PHY 222	Analytical Physics II	5
PLS 112	Introduction to American Government	3
		16
Fourth Semester (Winter)		
CIS/CPS[1]	Restricted CIS/CPS Elective	3-4
CIS 238	PC Assembly Language	3
ENG 122	Composition II or	
HUM*	Restricted Humanities Elective	3
MTH 197	Linear Algebra	4
		13-14

Total credit hours for program: 61-62

** Choose from list of Humanities courses that meet elements 13 and 14 on page 60.*
NOTE: Students intending to transfer to the U of M College of Literature, Science and Arts must satisfy the U of M foreign language requirement.

[1]Restricted CIS/CPS Electives:

CIS 121	Beginning UNIX	2
CIS 125	Local Area Networks I	2
CIS 221	UNIX Tools and Scripts	2
CIS 225	Local Area Networks II	2
CIS 265	Programming the Web	3
CPS 185	Visual Basic Programming	4
CPS 285	Advanced Visual Basic Programming	4
CPS 293	Visual C++ Windows Programming	4

Pre-Medicine Transfer – Biology Option

Associate in Science Degree Program: Code BIOM

Advisor: David Shier

This program is intended for students planning to transfer to a baccalaureate degree-granting institution and major in Biology or Pre-medical studies. As requirements vary, please check with a counselor for transfer information on your specific college and program.

Program Admission Requirements:

One year high school algebra, or MTH 097, or placement test
One year high school chemistry or CEM 057

Articulations:

Students planning to transfer to a four-year institution should discuss transferability of courses with an advisor or counselor.

Course Number	Course Title	Credit Hours
First Semester (Fall)		
BIO 101	Concepts of Biology	4
CEM 111	General Chemistry I	4
ENG 111	Composition I	4
MTH[1,a]	Restricted Math Elective	4-5
		16-17
Second Semester (Winter)		
BIO 103	General Biology II	4
CEM 122	General Chemistry II	4
ENG 122	Composition II	3
MTH[1,b]	Restricted Math Elective	4-5
		15-16
Third Semester (Fall)		
BIO 227	Zoology	4
CEM 211	Organic Chemistry I	4
PLS 108	Government & Society	3
Science[2,c,d]	Restricted Science Elective	3-4
HUM*[,e]	Restricted Humanities Elective	3
		17-18
Fourth Semester (Winter)		
BIO 228	Botany	4
CEM 222	Organic Chemistry II	4
Science[2,c,d]	Restricted Science Elective	4
Soc Sci[3]	Restricted Social Science Elective	3
		15

Total credit hours for program: 63-66

[1]Restricted Math Electives

MTH 169	Intermediate Algebra	4
MTH 179	Precalculus	4
MTH 191	Calculus I	5
MTH 192	Calculus II	4

[2]Restricted Science Electives

BIO 208	Genetics I	4
BIO 215	Cell Physiology and	
BIO 216	Cell Physiology Laboratory	4
BIO 237	Microbiology	4
CIS 100	Intro to Computers	3
GEO 100	Geography and Environment	3
PHY 111	General Physics I	4
PHY 122	General Physics II	4

[2]Restricted Social Science Electives

HST 121	Western Civ: Ancient Near East	3
HST 122	Western Civ: Modern World 1300-1815	3
HST 123	Western Civ: Modern World 1815- Present	3
SOC 100	Principles of Sociology	3
SOC 150	Marriage and Family	3

**Choose from list of Humanities courses that meet core elements 13 & 14 on page 60.*

[a] If Intermediate Algebra or its equivalent have been mastered with a "C" or better, then Precalculus should be elected. However, students planning to transfer to the University of Michigan should elect Calculus I.

[b] If Precalculus was elected previously, then Calculus I should be elected. If Calculus I was elected then Calculus II should be elected.

[c] BIO 215 and 216 must be selected together.

[d] Students planning to transfer to the University of Michigan will need one year of Physics to complete the Bachelors Degree. This may be taken as a part of the Associate's degree, or in the Junior year after transferring. If PHY 111 is selected then PHY 122 must be selected in the following semester.

[e] The first year of the foreign language requirement that exists at some institutions may be completed as part of the Associates degree or taken during the junior and senior years after transferring. Some institutions will not accept one semester of a two semester language requirement. Check with the college to which you are transferring.

Pre-Medicine Transfer – Chemistry Option

Associate in Science Degree Program: Code CEMP

Advisors: Kathy Butcher, Gary VanGenderen

This program is intended for students planning to transfer to a baccalaureate degree-granting institution and major in chemistry or pre-medical studies.

Program Admission Requirements

The following high school courses or equivalents must be completed with a grade of "C" or better:

— two years of high school algebra or MTH 169

— one year of high school trigonometry or MTH 178

— one semester of high school chemistry or CEM 057

— one semester of high school physics or PHY 105 or 111

Articulations

Students planning to transfer to a four-year institution should discuss transferability of courses with an advisor or counselor.

Course Number	Course Title	Credit Hours
First Semester (Fall)		
CEM 111	General Chemistry I	4
CIS 100	Introduction to Computers	3
ENG 111	Composition I	4
MTH 179	Pre Calculus	4
HUM*	Restricted Humanities Elective	1-3
		16-18
Second Semester (Winter)		
BIO 101	Concepts of Biology	4
CEM 122	General Chemistry II	4
ENG 122	Composition II	3
MTH 191	Calculus I	5
		16
Third Semester (Fall)		
CEM 211	Organic Chemistry I	4
MTH 192	Calculus II	4
PHY 211	Analytical Physics I	5
PLS 112	Introduction to American Government	3
Individual[1,a]	Restricted Individual Elective	3
		19
Fourth Semester (Winter)		
CEM 222	Organic Chemistry II	4
PHY 222	Analytical Physics II	5
Individual[1,b,c]	Restricted Individual Elective	4
Individual[1]	Restricted Individual Elective	3
		16

Total credit hours for program: 67-69

**Choose from list of Humanities courses that meet core elements 13 & 14 on page 60.*

[1]Restricted Individual Electives

BIO 227	Zoology	4
CEM 218	Analytical Chemistry	4
ECO 211	Principles of Economics I	3
ECO 222	Principles of Economics II	3
ENG 213	World Literature	3
ENG 224	World Literature II	3
HST 121	Western Civ to 1500	3
HST 122	Western Civilization The Early Modern World from 1300-1815	3
MTH 293	Calculus III	4

[a] This elective must be taken as the first part of a sequence, for example: HST 121 must be followed by HST 122 in the following semester.

[b] CEM 218 is not recommended for students desiring to transfer to Eastern Michigan University, or the University of Michigan in Chemistry as it is usually taken during the 5th semester at those institutions.

[c] BIO 227 should be taken by students with Pre-medicine intentions.

Liberal Arts Transfer — Math/Natural Sciences Option

Associate in Science Degree Program: Code LAMN

Advisors: Kathy Butcher, James Egan, Judith Fish, David Shier

This Liberal Arts program of study is designed to provide a broad base of skills and methods with which to acquire knowledge. The program is intended for students planning to transfer to a baccalaureate degree-granting institution. The program also provides for the intellectual, cultural, and personal development of individuals. Programs may differ slightly from college to college. Please check with a counselor for your specific college and program.

Program Admission Requirements
One year of high school algebra, or MTH 097

Articulations
Students planning to transfer to a four-year institution should discuss transferability of courses with an advisor or counselor. Transfer guides are available for many colleges in the Placement and Transfer Center.

Graduation Requirements:
A total of 60 semester credit hours in courses numbered 100 or above (15 credits must be earned at WCC) are needed for a Liberal Arts Transfer Program--Math/Natural Sciences Option Associate in Science Degree.

Course Number	Course Title	Credit Hours
Required Courses, 24 credit hours		
BIO 101	Concepts of Biology	4
CIS 100	Introduction to Computers	3
ENG 111	Composition I	4
ENG 122	Composition II	3
HUM*	Restricted Humanities Elective	3
MTH 169	Intermediate Algebra	4
PLS 112	Introduction to American Government	3
Math/Science Electives, 24 credit hours		
Select a total of 24 credit hours in Math and Science courses numbered 100 or above (Math courses must be higher than 169). A minimum of eight credit hours must be completed in each of the two disciplines and the remainder may be distributed as desired between Math and Science.		
MTH[1]	Mathematics Electives	8-16
Science[2]	Science Electives	8-16
Additional Individual Electives, 12 credit hours		
An additional 12 credit hours must be completed to reach the required 60 credits for an Associate degree. Select courses numbered 100 or above from any of the disciplines in Humanities and, Social Science, Math and Natural Science		
Total credit hours for program: 60		

**Choose from list of Humanities courses that meet elements 13 and 14 on page 60.*

1 Courses higher than MTH 169.

2 Choose from courses numbered 100 or higher in Astronomy, Biology, Chemistry, Geology, and/or Physics

Pre-Engineering Program

The requirements vary slightly from one engineering field to another, so two curricula have been developed for the program. Students should select Curriculum I or II depending on their field of interest. Further, it is important that students meet with a program advisor in order to clarify the options available.

Curriculum I
Pre-Engineering Science - Transfer

(All fields except Chemical Engineering and Materials Engineering)

Associate in Science Degree Program: Code PET

Advisor: George Kapp

Pre-Engineering Associate Degree programs are for students desiring a career in engineering. Graduates of the pre-engineering program qualify to transfer into the engineering programs at four-year colleges and universities and meet the minimum requirements for placement at the junior level.

Program Admission Requirements
The following high school courses or equivalents must be completed with a grade of "C" or better:

- two years of high school algebra or MTH 169
- one year of high school trigonometry or MTH 178
- one semester of high school chemistry or CEM 057
- one semester of high school physics or PHY 105 or 111

Articulations
Students planning to transfer to a four-year institution should disuss transferability of courses with an advisor or counselor. Transfer guides for many colleges are available in the Placement and Transfer Center.

Course Number	Course Title	Credit Hours
First Semester (Fall)		
CEM 111	General Chemistry I	4
CPS 187	Introduction to FORTRAN Programming	4
ENG 111	Composition I	4
MTH 191	Calculus I	5
Restricted Individual Elective (choose one)		
HSC 131	CPR/FPR and First Aid or	
SCI 100	Intro to Natural Sciences or	1
	Course meeting core element 16	
		18
Second Semester (Winter)		
CEM 122	General Chemistry II	4
MTH 192	Calculus II	4
MTH 197	Linear Algebra	4
Restricted Individual Elective (choose one)		
ENG 107 *	Technical Communications or	
ENG 122	Composition II or	
IND 100[1]	Technical Drawing	3-4
		15-16

Third Semester (Fall)

MTH 293[2]	Calculus III	4
PHY 211	Analytical Physics I	5
PLS 112	Introduction to American Government	3
Restricted Individual Elective (choose one)		
ECO 211	Principles of Economics I or	
PSY 100	Introductory Psychology	3
Restricted Individual Elective (choose one)		
ART 130	Art Appreciation or	
ENG 213 *	World Literature I or	
PHL 101	Introduction to Philosophy	3
		18

Fourth Semester (Winter)

MTH 295[3]	Differential Equations [3]	4
PHY 222	Analytical Physics II	5
Restricted Individual Elective (choose one)		
ECO 222*	Principles of Economics II or	
HST 122	Western Civ: The Early Modern World from 1300 or	
SOC 100	Principles of Sociology	3
Restricted Individual Elective (choose one)		
ENG 200	Shakespeare or	
ENG 224*	World Literature or	
HUM 101	Introduction to Humanities or	
HUM 102	Introduction to Humanities II	3
		15

Total credit hours for program: 66-67

** Recommended elective.*

[1] Technical Drawing is required for Civil, Mechanical, and Naval Engineering at the University of Michigan. Some engineering schools may require ENG 122 Composition II.

[2] Required for Civil, Mechanical and Environmental Science Engineering at the University of Michigan.

[3] It is recommended that students take Differential Equations before Analytical Physics II. Therefore, students may want to take Calculus III, the prerequisite for Differential Equations, during the Spring-Summer semester following the second semester. Differential Equations would then be taken in the third semester.

Curriculum II
Pre-Engineering Science Transfer
Chemical and Materials Engineering Option

Associate in Science Degree Program: Code PECT

Advisor: George Kapp

Pre-Engineering Associate Degree programs are for students desiring a career in engineering. Graduates of the pre-engineering program qualify to transfer into the engineering programs at four-year colleges and universities and meet the minimum requirements for placement at the junior level.

Program Admission Requirements

The following high school courses or equivalents must be completed with a grade of "C" or better:

- two years of high school algebra or MTH 169
- one year of high school trigonometry or MTH 178
- one semester of high school chemistry or CEM 057
- one semester of high school physics or PHY 105 or 111

Articulations

Students planning to transfer to a four-year institution should disuss transferability with an advisor or counselor. Transfer guides for many colleges are available in the Placement and Transfer Center.

Course Number	Course Title	Credit Hours
First Semester (Fall)		
CEM 111	General Chemistry I	4
CPS 187	Introduction to FORTRAN Programming	4
ENG 111	Composition I	4
MTH 191	Calculus I	5
Restricted Science Elective (choose one)		
HSC 131	CPR/FPR and First Aid or	
SCI 100	Intro to Natural Sciences	1
	Course meeting core element 16	1
		18

Second Semester (Winter)

CEM 122	General Chemistry II	4
ECO 211[1]	Principles of Economics I	3
MTH 192	Calculus II	4
MTH 197	Linear Algebra	4
		15

Third Semester (Fall)

CEM 211	Organic Chemistry I	4
MTH 293[2]	Calculus III	4
PHY 211	Analytical Physics I	5
PLS 112	Introduction to American Government	3
Restricted Humanities Elective (choose one)		
ART 130	Art Appreciation or	
ENG 213 *	World Literature I or	
PHL 101	Introduction to Philosophy	3
		19

Fourth Semester (Winter)

CEM 222	Organic Chemistry II	4
MTH 295[3]	Differential Equations	4
PHY 222	Analytical Physics II	5
Restricted Humanities Elective (choose one)		
ENG 200	Shakespeare or	
ENG 224 *	World Literature II or	
HUM 101	Introduction to Humanities or	
HUM 102	Introduction to Humanities II	3
		16

Total credit hours for program: 68

** Recommended elective.*

[1] Some engineering schools may require ENG 122 Composition II in place of a Social Science or Humanities course. Please check with the engineering school about specific requirements.

[2] Required for Chemical and Materials Engineering at the University of Michigan.

[3] It is recommended that students take Differential Equations before Analytical Physics II. Therefore, students may want to take Calculus III, the prerequisite for Differential Equations, during the Spring-Summer semester following the second semester. Differential Equations would then be taken in the third semester.

Automotive Services

Automotive Body Repair

Mastery Certificate Program: Code ABRC

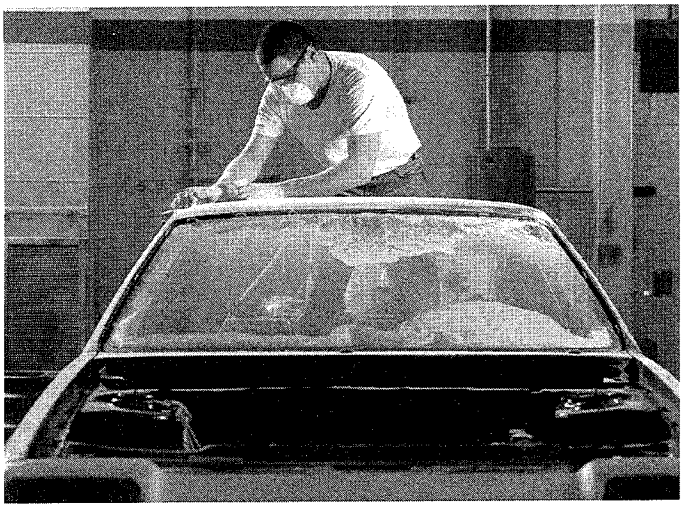
Advisor: Lester Jordan

This program provides career training as an auto body repair technician. Auto body repairers are the workers who straighten bent frames, remove dents and replace damaged parts that are beyond repair. Usually they can fix all types of vehicles, but most repairers work mainly on cars and small trucks. They receive instruction from their supervisors who have determined which parts are to be restored or replaced and how much time the job should take. They use special machines to align damaged frames and body sections and tools such as a pneumatic metal-cutting gun, acetylene torch, welding equipment, hydraulic jack, hand prying bar and pneumatic hammer. They also do filling of dents with plastic or solder, then file, grind, smooth and shape for painting.

Program Admission Requirement: None

Course Number	Course Title	Credit Hours
First Semester (Fall)		
ABR 111	Auto Body Repair Fundamentals	4
ABR 112	Auto Refinishing Fundamentals	4
ABR 113	Body Service Fundamentals	2
ABR 114	Applied Auto Body Welding	1
ABR 126	Fundamentals of Frame & Body Align.	2
MTH 090	Occupational Mathematics	3
		16
Second Semester (Winter)		
ABR 123	Auto Body Repair Applications	4
ABR 124	Auto Refinishing Applications	4
ABR 125	Flat Rate Estimating	2
ABR 127	Major Repair Fundamentals	2
ENG 107	Technical Communication	3
		15

Total credit hours for program: 31



Automotive Body Service

Associate in Technical Studies Degree Program: Code ABRD

Advisor: Lester Jordan

This program provides career training as an auto body service technician. This program is a combination of the auto body repairer and automobile spray painter programs. Upon completion of the program one becomes a master technician.

Program Admission Requirement: None

Course Number	Course Title	Credit Hours
First Semester (Fall)		
ABR 111	Auto Body Repair Fundamentals	4
ABR 112	Auto Refinishing Fundamentals	4
ABR 113	Body Service Fundamentals	2
ABR 114	Applied Auto Body Welding	1
MTH 090	Occupational Mathematics	3
WAF 101	Acetylene Welding	2
		16
Second Semester (Winter)		
ABR 123	Body Repair Applications	4
ABR 124	Auto Refinishing Applications	4
ABR 125	Flat Rate Estimating	2
ABR 127	Major Repair Fundamentals	2
ASV 124	Wheel Balance and Alignment	2
CIS 100	Intro to Computers	3
		17
Third Semester (Fall)		
ABR 126[1]	Fund. of Frame & Body Alignment	2
ABR 219	Major Repair Procedures	4
ABR 220	Enamel Refinishing Practices	4
ASV 214	Steering and Suspension Systems	2
ENG 107	Technical Communication	3
SCI 100	Intro to Natural Sciences	1
		16
Fourth Semester (Winter)		
ABR 199[2]	On-The-Job Training	4
ABR 230	Specialized Study	4
ASV 227	Heating and Air Conditioning	2
PLS 112	Introduction to American Government	3
HUM*	Restricted Humanities Elective	1-3
		14-16

Total credit hours for program: 63-65

** Choose from list of Humanities courses that meet elements 13 and 14, on page 60.*

[1] ABR 226 Unibody Structural Alignment may be substituted for ABR 126 Fundamentals of Frame and Body Alignment.

[2] An additional four hours of ABR 230 Specialized Study or approved elective may be substituted for ABR 199 On-The-Job Training.

Automotive Mechanics

Mastery Certificate Program: Code ASC

Advisors: Thomas Hemsteger, John Mann, Bill Schuster

This program provides career training as an auto mechanic. The mechanic must have the ability and skill to make accurate diagnosis of mechanical problems. This requires good reasoning ability as well as a thorough knowledge of automobiles. The mechanic performs minor repairs, replaces and adjusts fuel, electrical and cooling system components. Upon completion of this program, students will be prepared to take the following certification tests: engine repair, brakes and manual drive train and axle.

Program Admission Requirement: None

Course Number	Course Title	Credit Hours
First Semester (Fall)		
ASV 111	Cylinder Head Service	2
ASV 113	Manual Trans. and Drivetrains	2
ASV 116	Automotive Electronics	2
ASV 118	Fuel Systems	2
ASV 125	Brake Systems	2
WAF	Welding Elective (100 or higher)	2
Science[1]	Restricted Science Technology Elective	3-5
		15-17
Second Semester (Winter)		
ASV 124	Wheel Balance and Alignment	2
ASV 126	Electrical Systems	2
ASV 128	Fuel Injection	2
ASV 160	Small Engine Repair	2
ASV[2]	Restricted Automotive Elective	4
ENG	Restricted ENG Elective (100, 107, 111, or 122)	3-4
		15-16

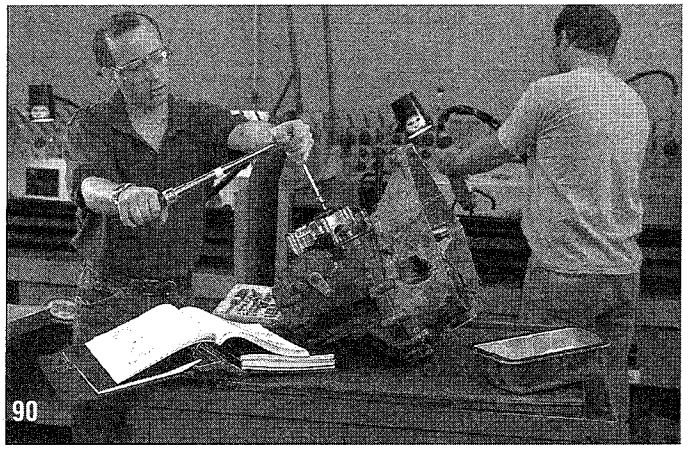
Total credit hours for program: 30-33

[1]Restricted Science Electives

CEM 111	General Chemistry (or higher)	4
CIS 100	Introduction to Computers (or higher)	3
PHY 105	Introductory Physics (or higher)	4-5

[2]Restricted ASV Electives

ASV 129	Diagnosis and Reair I	4
ASV 174	ASV Co-Op I	4
ASV 199	On the Job Training	4



Automotive Service Technology

Associate in Technical Studies Degree Program: Code ASD

Advisors: Thomas Hemsteger, John Mann, Bill Schuster

This program provides training as an automotive technician. Upon completion, students have the knowledge to pass state and national exams to become certified Master Automotive Technicians. The tests one would be prepared to take are: Engine Repair, Automatic Trans./Transaxle, Manual Drive Train and Axles, Suspension and Steering, Brakes, Electrical Systems, Heating and Air Conditioning and Engine Performance.

Program Admission Requirement: None

Course Number	Course Title	Credit Hours
First Semester (Fall)		
ASV 111	Cylinder Head Service	2
ASV 113	Manual Trans. and Drivetrains	2
ASV 116	Automotive Electronics	2
ASV 118	Fuel Systems	2
ASV 124	Wheel Balance & Alignment	2
ASV 125	Brake Systems	2
MTH 090	Occupational Math	3
		15
Second Semester (Winter)		
ASV 126	Electrical Systems	2
ASV 128	Fuel Injection	2
ASV 212	Automatic Transmissions - Mechanical	2
ASV 214	Steering and Suspension	2
ASV 227	Heating and Air Conditioning	2
ASV	Restricted ASV Elective (129, 174 or 199)	3-4
ENG	Restricted ENG Requirement (107 or 111)	3-4
		16-18
Third Semester (Fall)		
ASV 160	Small Engine Repair	2
ASV 215	Brake System Service	2
ASV 216	Electrical Circuits	2
ASV 218	Engine Performance Diagnosis	2
ASV 222	Automatic Transmission -Hydraulic Systems	2
ASV 234	Steering and Suspension	1
ASV 239	Customer Service	3
PLS 112	Introduction to American Government	3
		17
Fourth Semester (Winter)		
ASV 228	Driveability	2
CIS 100	Introduction to Computers	3
HUM*	Restricted Humanities Elective	1-3
PHY 110	Applied Physics	4
SCI 100	Intro to Natural Sciences (or BIO 101 or BIO 102)	1-4
Technical[1]	Restricted Technical Elective	2-4
		13-20

Total credit hours for program: 61-70

** Choose from list of Humanities courses that meet elements 13 and 14 on page 60.*

[1]Restricted Technical Electives

ELE 137	Switching Logic	4
FLP 111	Fluid Power Fundamentals	4
FLP 226	Pneumatics	3
MTT 100	Machine Shop Theory	3
MTT 103	Introduction to Materials	3
MTT 111	Machine Shop Theory/Practice	4
ROB 111	CIM Fundamentals	4
WAF 100	Fundamentals of Welding	2

Automotive Spray Painting

Mastery Certificate Program: Code ABRS

Advisor: Lester Jordan

This program provides training as an automotive spray painter. This person repaints automotive vehicles, removes old paint from vehicles or damaged or repaired portions of vehicles, mixes paints to attain specified color or to match color of vehicle and paints vehicle or portion of vehicle with spray gun.

Program Admission Requirement: none

Course Number	Course Title	Credit Hours
First Semester (Fall)		
ABR 111	Auto Body Repair Fundamentals	4
ABR 112	Auto Refinishing Fundamentals	4
ABR 113	Body Service Fundamentals	2
ABR 114	Applied Auto Body Welding	1
MTH 090	Occupational Mathematics	3
WAF 101	Acetylene Welding	2
		16
Second Semester (Winter)		
ABR 124	Auto Refinishing Applications	4
ABR 199[1]	On-The-Job Training	2
ABR 230	Specialized Study	4
ENG 107	Technical Communication	3
		13
Third Semester (Spring/Summer)		
ABR 125	Flat Rate Estimating	2

Total credit hours for program: 31

[1] *An additional two hours in ABR 230 Specialized Study or approved elective may be substituted for ABR 199 On-The-Job Training.*

Automotive Spray Painting Assistant

Achievement Certificate Program: Code ASPC

Advisor: Lester Jordan

This is a short-term program designed to prepare students for entry-level employment in the automotive services field. This program will also give students a foundation in automotive spray painting on which to build if they wish to continue course work in an associate's degree program. Students will develop skills in spray painting automobiles, including removing old paint, mixing paints to attain specific colors and sprays, and repainting vehicles.

Program Admission Requirements: None

Course Number	Course Title	Credit Hours
ABR 111	Auto Body Repair Fundamentals	4
ABR 112	Auto Refinishing Fundamentals	4
ABR 113	Body Service Fundamentals	2
ABR 114	Applied Auto Body Welding	1
MTH 090	Occupational Mathematics or	
MTT 111	Machine Shop Theory and Practice	3-4
WAF 101	Acetylene Welding	2
		16-17

Total credit hours for program: 16-17

Drafting Programs

Architectural Drafting

Associate in Technical Studies Degree Program: Code AD

Advisors: Michael Pogliano, James Teevens

This program provides career training in architectural drafting. Drafters prepare detailed drawings based on rough sketches, specifications and calculations made by scientists, engineers, architects and designers. They also calculate the strength, quality, quantity and cost of materials. Final drawings contain a detailed view of the object from all sides as well as specifications for materials to be used, procedures to be followed and other information necessary to complete the job. In preparing drawings, drafters use compasses, dividers, protractors, triangles and other drafting devices. To help solve technical problems, they also use engineering handbooks, tables and calculators.

Program Admission Requirements:
One year of high school algebra, or MTH 097, or equivalent with a grade of "C" or better.

Course Number	Course Title	Credit Hours
First Semester		
ARC 111	Architectural Drawing I	6
ARC 117	Construction Materials	3
ENG 111	Composition I	4
MTH 152	Technical Geometry and Trigonometry	4
		17
Second Semester		
ARC 100	Specifications	1
ARC 109	Site Layout	3
ARC 120	Mechanical and Electrical Systems in Buildings	3
ARC 122	Architectural Drawing II	6
PHY 105	Conceptual Physics	4
		17
Third Semester		
ARC 150	Presentation Drawings and Models	4
ARC 210	Structure in Architecture	2
ARC 213	Architectural Drawing III	6
CIS 103	MSDOS Commands	1
ENG 107	Technical Communications	3
		16
Fourth Semester		
ARC 224	Architectural Drawing IV	6
ARC 227	Estimating Construction Costs	3
PLS 112	Introduction to American Government	3
PSY 100	Introduction to Psychology	3
HUM*	Restricted Humanities Elective	1-3
		16-18

Total credit hours for program: 66-68

** Choose from list of Humanities courses that meet elements 13 and 14 on page 60.*

Architectural Drafting Detailing

Mastery Certificate Program: Code ADD

Advisors: Michael Pogliano, James Teevens

This program provides career training as an architectural drafting detailer. Detailers perform many of the same tasks as a Drafting Technician, drawing each part shown on the layout and giving dimensions, materials and other information to make the drawing clear and complete.

Program Admission Requirements
— One year of high school algebra, or MTH 097, or equivalent with a grade of "C" or better.

Course Number	Course Title	Credit Hours
First Semester (Fall)		
ARC 111	Architectural Drawing I	6
ARC 117	Construction Materials	3
ENG	Restricted ENG Elective (091 or 111)	4
MTH 169	Intermediate Algebra	4
		17
Second Semester		
ARC 100	Specifications	1
ARC 109	Site Layout	3
ARC 120	Mechanical and Electrical Systems in Buildings	3
ARC 122	Architectural Drawing II	6
ARC 150	Presentation Drawings and Models	4
		17

Total credit hours for program: 34

Computer Aided Drafting (CAD) — Electronic Option

Associate in Technical Studies Degree Program: Code CADE

Advisors: Frank Gerlitz, Belinda McGuire

The CAD programs provide career training as a CAD Operator/Technician. These technicians prepare clear, complete, and accurate working plans and detail drawings from rough sketches, specifications, and calculations of engineers and designers to be used for engineering and manufacturing purposes. Technicians' drawings usually provide a number of different views of the object and must be exact and include information concerning the materials to be used. Technicians in this occupation often specialize in a particular field such as the electronic or mechanical (machine drafting and related) option. Advanced operators perform product manufacturing preparation for CAM and computer integrated manufacturing.

Program Admission Requirements
The following high school courses or equivalents must be completed with a grade of "C" or better.

1. Two years of high school drafting, or IND 100
2. Two years of high school algebra (Algebra I and II) or MTH 097 and MTH 169
3. One year of high school computer instruction or CIS 100, or CIS 110

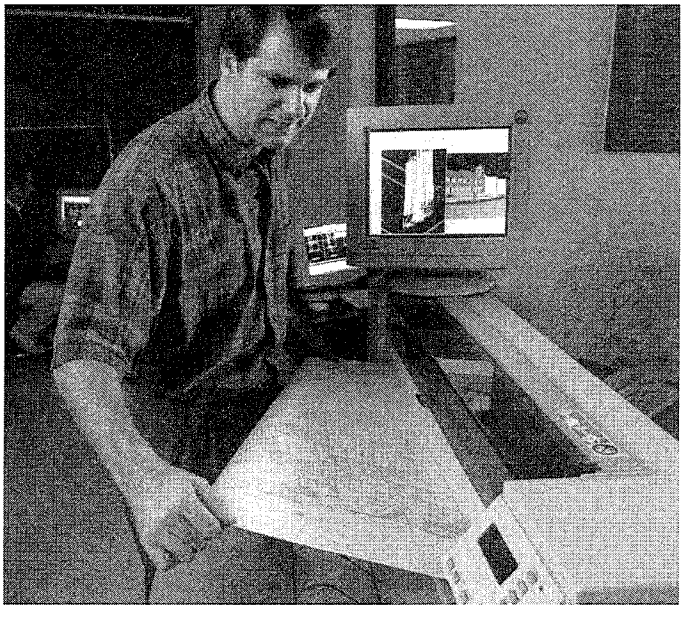
Course Number	Course Title	Credit Hours
First Semester (Fall)		
ELE 111	Electrical Fundamentals	4
ELE 137**	Switching Logic	4
ENG 107	Technical Communications or	
ENG 111	English Composition I	3-4
IND 216	Introduction to Computer Aided Drafting	2
		13 - 14
Second Semester (Winter)		
ELE 211	Basic Electronics	4
HSC 131	CPR/FPR	1
IND 251	Fundamentals of Electronic Drafting I	2
MTH 179	Precalculus	4
PLS	Political Science Elective (112 or 150)	3
		14
Third Semester (Fall)		
CPS 171	Introduction to Programming with C++	4
ELE 224	Introduction to PLC's	4
IND 220	CAD Application—Electronic	4
HUM*	Restricted Humanities Elective	1-3
ELE	Restricted ELE elective (ELE 134 or higher)	4
		17-19
Fourth Semester (Winter)		
ELE 250	Microprocessor Interfacing	4
IND 222	Introduction to Electronic Design	4
IND 230	Advanced Product Drafting	4
IND[1]	Restricted IND Elective	4
		16

Total credit hours for program: 60-63

** Choose from list of Humanities courses that meet elements 13 and 14 on page 60.*
*** Appropriate Electronic Courses or work experience may be substituted.*

[1]Restricted IND Electives

IND 112	Descriptive Geometry	4
IND 114	Industrial Drafting	4
IND 123	Geometric Dimensioning and Tolerancing	3
IND 174	IND Co-op I	1-3
IND 212	Theory of Dies	2
IND 217	Intro to 3D CAD	2
IND 218A	Interactive Computer Aided Drafting	2



Computer Aided Drafting (CAD) — Mechanical Option

Associate in Technical Studies Degree Program: Code CADM

Advisors: Frank Gerlitz, Belinda McGuire

The CAD programs provide career training as a CAD Operator/Technician. These technicians prepare clear, complete, and accurate working plans and detail drawings from rough sketches, specifications, and calculations of engineers and designers to be used for engineering and manufacturing purposes. Technicians' drawings usually provide a number of different views of the object and must be exact and include information concerning the materials to be used. Technicians in this occupation often specialize in a particular field such as the electronic or mechanical (machine drafting and related) option. Advanced operators perform product manufacturing preparation for CAM and computer integrated manufacturing.

Program Admission Requirements

The following high school courses or equivalents must be completed with a grade of "C" or better:

1. Two years of high school algebra I and II or MTH 097 and MTH 169
2. One semester of high school geometry and one semester of high school trigonometry or MTH 152 or MTH 177
3. Two years of high school drafting or IND 100
4. One year of high school computer instruction or CIS 100

Course Number	Course Title	Credit Hours
First Semester (Fall)		
ENG	Restricted ENG Elective (ENG 107 or 111)	3-4
IND 111	Industrial Drafting	4
IND 112	Descriptive Geometry	4
IND 216	Introduction to Computer Aided Drafting	2
MTT 111	Machine Shop Theory and Practice	4
		17-18
Second Semester (Winter)		
IND 114	Industrial Drafting	4
IND 121	Theory of Jigs and Fixtures	2
IND 123	Geometric Dimensioning and Tolerancing	3
IND 217	Introduction to 3-D CAD	2
MTT 103	Introduction to Materials	3
ROB 111	CIM Fundamentals	4
		18
Third Semester (Fall)		
CIS/CPS[1]	Restricted CIS/CPS Elective or	
NCT 112	Intro to N/C Machining	3-4
IND 107	Mechanisms	4
IND 221	CAD Application - Mechanical	4
MTH 179	Precalculus	4
SCI 100	Intro to Natural Sciences	1
		16-17
Fourth Semester (Winter)		
IND 105	Pictorial Drawing	2
IND 223	Introduction to Surfaces and Solids	4
IND 230	Advanced Product Drafting	4
PLS 112	Introduction to American Government	3
HUM*	Restricted Humanities Elective	1-3
		14-16

Total credit hours for program: 65-69

** Choose from list of Humanities courses that meet elements 13 and 14 on page 60.*

[1]Restricted CIS/CPS Electives

CPS 171	Introduction to Programing with C++	4
CIS 275	C Programming Language	4

(If students choose an elective other than those listed above, they must complete a substitution form. See an advisor for details.)

Drafting Detailing

Mastery Certificate Program: Code DFTC

Advisors: Frank Gerlitz, Belinda McGuire

This program provides career training as a drafter detailer. The drafter prepares clear, complete and accurate working plans and detail drawings from rough sketches, specifications and calculations for engineers and designers to be used for engineering or manufacturing purposes. The drawings usually provide a number of different views of the object, must be exact and include information concerning the materials to be used. The detailer uses a variety of instruments including protractors, compasses, triangles, squares, drawing pens and pencils. Drafting detailers make complete drawings giving dimensions, materials and any other necessary information of each part shown on the layout.

Program Admission Requirements

Two full years of high school drafting or IND 100 must be completed with a grade of "C" or better before enrolling in first semester drafting courses.

Course Number	Course Title	Credit Hours
First Semester (Fall)		
IND 111	Industrial Drafting	4
IND 112	Descriptive Geometry	4
MTT 111	Machine Shop Theory and Practice	4
MTH	Restricted MTH Elective (090 or 151)	3-4
		15-16
Second Semester (Winter)		
ENG	Restricted English Elective (107 or 111)	3-4
IND 105	Pictorial Drawing	2
IND 114	Industrial Drafting	4
IND 123	Geometric Dimensioning and Tolerancing	3
MTT 103	Introduction to Materials	3
Technical[1]	Restricted Technical Elective	2-4
		17-20

Total credit hours for program: 32-36

[1]Restricted Technical Electives

IND 100	Technical Drawing	4
IND 121	Theory of Jigs & Fixtures	2
IND 216	Introduction to Computer-Aided Drafting	2
ROB 111	CIM Fundamentals	4
WAF 100	Fundamentals of Welding	2

(If students choose an elective other than those listed above, they must complete a substitution form. See an advisor for details.)

Industrial Drafting Technology

Associate in Technical Studies Degree Program: Code IDT

Advisors: Frank Gerlitz, Belinda McGuire

This program provides training as an industrial drafting technician. This technician specializes in drafting detailed work drawings of machinery and mechanical devices indicating dimensions and tolerances, fasteners and joining requirements and other engineering data. The technician drafts multiple-view assembly and sub-assembly drawings and documentation as required for manufacturing processes, material handling, tooling and maintenance of equipment and plant production lines. The technician may be required to perform basic CAD operations on "desk top" stations.

Program Admission Requirements

The following high school courses or equivalents must be completed with a grade of "C" or better:

1. Two years of high school drafting or IND 100
2. One year of high school Algebra I or MTH 097
3. One year of high school computer instruction or CIS 100 or CIS 110

Course Number	Course Title	Credit Hours
First Semester (Fall)		
IND 111	Industrial Drafting	4
IND 112	Descriptive Geometry	4
MTT 111	Machine Shop Theory and Practice	4
MTH 169	Intermediate Algebra	4
		16
Second Semester (Winter)		
HUM*	Restricted Humanities Elective	1-3
IND 114	Industrial Drafting	4
IND 121	Theory of Jigs and Fixtures	2
IND 123	Geometric Dimensioning and Tolerancing	3
MTT 103	Introduction to Materials	3
MTH 152	Technical Geometry and Trigonometry or	
MTH 177	Triangle Trigonometry	3-4
		16-19
Third Semester (Fall)		
CPS 171	Introduction to Programming with C++	4
ENG 107	Technical Communications or	
ENG 111	English Composition I	3-4
IND 105	Pictorial Drawing	2
IND 107	Mechanisms	4
IND 216	Introduction to Computer Aided Drafting	2
		15-16
Fourth Semester (Winter)		
IND 217	Introduction to 3-D CAD	2
IND 230	Advanced Product Drafting	4
IND 251	Fundamentals of Electronic Drafting I	2
PLS 112	Introduction to American Government	3
SCI 100	Intro to Natural Sciences	1
Technical[1]	Restricted Technical Elective	2-4
		14-16

Total credit hours for program: 61-67

** Choose from list of Humanities courses that meet elements 13 and 14 on page 60.*

[1]Restricted Technical Electives

IND 100	Technical Drawing	4
IND 218A	Interactive Computer-Aided Drafting	2
ROB 111	CIM Fundamentals	4
WAF 100	Fundamentals of Welding	2

(If students choose an elective other than those listed above, they must complete a substitution form. See an advisor for details)

Mechanical Engineering Technology/ Manufacturing Engineering Technology

Associate in Applied Science Degree Program: Code METT

Advisor: Frank Gerlitz

The Mechanical Engineering Technology Program offers individuals the opportunity to prepare for rewarding and responsible careers in support of technical and engineering activities in business and industry. Students may earn an Associate Degree in Applied Science with options in manufacturing, mechanical, or drafting and design technology. The Engineering Technology curriculum is based on engineering theory but emphasis is placed on application, implementation skills and computer modeling. The Engineering Technologist is responsible for the application and implementation of engineering design methods and analysis techniques for the improvement of products, processes and systems. Graduates of this program meet the minimum requirements for placement at the junior level of BSET programs at four year institutions, or may seek immediate employment in industry.

Program Admission Requirements

The following high school courses or equivalents must be completed with a grade of "C" or better:

1. Two years of high school drafting or IND 100
2. Two years of high school algebra (Algebra I and II) or MTH 097 and MTH 169
3. High school chemistry or CEM 057
4. High school physics or PHY 105 or 111

Articulations

This program is articulated with the University of Toledo, Engineering Technology Program. If you are interested in transferring to this institution, pick up a copy of the articulation agreement in the Placement and Transfer Center, from the METT faculty advisor, or in the area Dean's office. Students planning to transfer to other four-year institutions should consult with an advisor at the receiving institution to confirm the transferability of courses.

Course Number	Course Title	Credit Hours
Fall Semester		
CEM 111	General Chemistry I	4
CPS[1]	Restricted Computer Programming Elective	3-4
IND 216	Introduction to CAD	2
IND 217	Introduction to 3D CAD	2
MTH 191	Calculus I or equivalent	5
MTT 103	Introduction to Materials	3
		19-20
Winter Semester		
ENG	English Composition Elective (111 or 122)	3-4
MET 211	Statics	3
MTH 192	Calculus 192 or equivalent	4
MTT 111	Machine Shop Theory and Practice	4
Technical[2]	Approved Technical Elective Sequence	3
		17-18

Fall Semester

MET 241	Dynamics	3
PHY 211	Analytical Physics I or equivalent	5
Technical[2]	Approved Technical Elective Sequence	3
Technical[2]	Restricted Technical Elective	3
HUM*	Restricted Humanities Elective	3
		17

Winter Semester

MET 260	Strength of Materials	3
PHY 222	Analytical Physics II or equivalent	5
PLS	Political Science Elective (PLS 112 or PLS 211)	3
Technical[2]	Restricted Technical Elective	3
Science[3]	Restricted Science Elective	1-4
		15-18

Total credit hours for program: 68-73

** Choose from list of Humanities courses that meet elements 13 and 14 on page 60.*

[1]Restricted CPS Programming Electives

CPS 171	Introduction to CC++ Programming	4
CPS 187	Introduction to FORTRAN Programming	4
CPS 191	Introduction to LISP Programming	3

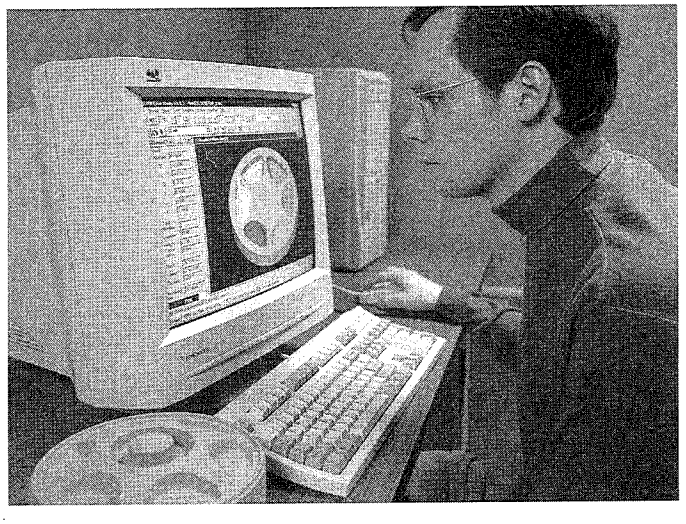
[2]Restricted Technical Electives

Students should select 12 credit hours from the disciplines listed below. Six of those credit hours must make up a sequence of two courses from the same discipline area. All technical electives must be approved by the program advisor.

Auto Body Repair (ABR)
Automotive Service (ASV)
Architectonics (ARC)
Construction Technology (CON)
Industrial Drafting (IND)
Electricity/Electronics (ELE)
Fluid Power (FLP)
Heating (HTG)
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)

[3]Restricted Science Electives

BIO 101	Concepts of Biology	4
BIO 102	Human Biology	4
BIO 103	General Biology II	4
BIO 111	Anatomy & Physiology	5
HSC 131	CPR/FPR and First Aid	1
HSC 131A	Community CPR	½
SCI 100	Introduction to Natural Science	1



Electricity and Electronics

Computer Systems Technology

Mastery Certificate Program: Code CSTC

Advisors: Gary Downen, Laurence Krieg, Catherine Wagner, Philip Mullins, John Rinn

This certificate program trains individuals for employment as microcomputer service technicians. The program thoroughly prepares the student to pass the rigorous Computing Technology Industry Association's (CompTIA) A+ Certification exam. The program covers core hardware skills including configuring, installing, diagnosing, repairing, upgrading and maintaining personal computers, storage media and essential peripherals. In addition, basic operating systems (MS DOS and MS Windows and Macintosh OS) are covered in depth. Customer relations skills are also emphasized.

Program Admission Requirements

One year of high school computer instruction in Windows Operating System with a grade of "C" or better, or CIS 116 and CIS 117, or permission of Program Advisor.

Course Number	Course Title	Credit Hours
First Semester (Fall)		
CIS 110	Business Computer Systems	4
CIS 118	DOS for Technicians	2
CIS 125	Local Area Networks I	2
ELE 150	PC Hardware Concepts and Troubleshooting	4
ENG/COM[1]	Restricted ENG/COM Elective	3-4
		15-16
Second Semester (Winter)		
CIS 121	Beginning UNIX	2
CIS 160	Exploring the Internet	2
CIS 225	Local Area Networks II	2
ELE 155	Advanced Computer Concepts and Troubleshooting	4
ELE 216A	Modem Installation and Configuration	2
ELE 225A	Network Installation and Troubleshooting	2
ELE 299	Customer Relations (or ELE 174 - ELE Co-Op I)	1
		15

Total credit hours for program: 30-31

[1]Restricted ENG/COM Electives

COM 101	Fundamentals of Speaking	3
COM 102	Interpersonal Communication	3
ENG 100	Communication Skills	4
ENG 107	Technical Communications	3
ENG 111	Composition I	4
ENG 122	Composition II	3

Electrical Engineering Technology

Associate in Applied Science Degree Program: Code EETT

Advisors: William Cleary, Gary Downen, Lawrence Kramer, Catherine Wagner, Philip Mullins, Dale Petty, John Trame

This associate degree program is the first two years of a four-year bachelor's degree in Electrical Engineering Technology. The program's primary focus is electrical engineering theory and practice using computer-aided design and computer modeling. Areas of study include microprocessor and digital electronic design, motor control design, and electronic communications system design and analysis. The program is designed to meet the demands of the workplace and to meet or exceed local university transfer requirements. Successful graduates are prepared to transfer to any university Electrical Engineering Technology program or seek immediate employment in industry as engineering technicians.

Program Admission Requirements

1. One year of high school drafting or IND 100 or equivalent.
2. Two years of high school algebra, or MTH 097 and MTH 169 or, equivalent placement test.
3. One year of high school chemistry or CEM 057 and CEM 058
4. One year of high school computer instruction or CIS 100 or CIS 110

Articulations

This program is articulated with the University of Toledo Engineering Technology Program. If you are interested in transferring to this institution, pick up a copy of the articulation agreement. Copies are available in the Placement and Transfer Center, from an EET faculty advisor, and in the area Dean's office. Students planning to transfer to other four-year institutions should consult with an advisor at the receiving institution to confirm the transferability of courses.

Course Number	Course Title	Credit Hours
First Semester (Fall)		
CEM 111	General Chemistry I	4
CPS 171	Introduction to Programming with C++	4
EET 100	DC Circuit Analysis and Measurements	3
MTH 178	General Trigonometry	3
MTH 179	Precalculus	4
		18
Second Semester (Winter)		
EET 110	Digital Electronics Design I	3
ENG 111	English Composition I	4
IND 216	Introduction to Computer Aided Drafting	2
IND 251	Fundamentals of Electronic Drafting	2
MTH 186	Applied Calculus I	3
PHY 111	General Physics I	4
		18
Third Semester (Fall)		
EET 200	AC Circuit Analysis and Design	3
EET 201	Linear Electronics I	3
MTH 286	Applied Calculus II	3
PHY 122	General Physics II	4
PLS	Political Science Elective (112 or 211)	3
		16
Fourth Semester (Winter)		
EET 211	Digital Electronics Design II	3
EET 221	Linear Electronics II	3
EET 230	Motors and Controls	3
EET 231	Electronic Communications	3
HUM*	Restricted Humanities Elective	3
Science[1]	Restricted Science Elective	1-5
		16-20

Total credit hours for program: 68-72

*** Restricted Humanities Electives**

Choose from list of Humanities courses that meet elements 13 and 14 on page 60.

[1] Restricted Science Electives

SCI 100	Introduction to Natural Sciences	1
BIO 101	Concepts of Biology	4
BIO 102	Human Biology	4
BIO 103	General Biology II	4
BIO 111	Anatomy and Physiology	5

Electronics Technology

Mastery Certificate: Code ELEC

Advisors: William Cleary, Gary Downen, Lawrence Kramer, Phillip Mullins, Dale Petty, John Trame, Catherine Wagner

This program trains individuals for entry-level employment in almost any of the electrical/electronics cluster of occupations. Students learn the fundamentals of electricity and electronics, including the installation, maintenance and troubleshooting of personal computers, electric motors and motor controls. Students also learn how to communicate effectively in oral and written form and to exercise the interpersonal skills required to work successfully with customers, managers and co-workers.

Program Admission Requirements

1. Two years of high school algebra with a grade of "C" or better, or MTH 097 and MTH 169, or equivalent placement test.
2. One year of high school Windows Operating System with a grade of "C" or better, or CIS 116 and CIS 117, or permission of program advisor.

Course Number	Course Title	Credit Hours
Fall Semester		
ELE 104	Electrical Soldering	1
ELE 111	Electrical Fundamentals	4
ELE 137	Switching Logic	4
ELE 140	Software Concepts or	
CPS 171	Introduction to Programming with C++	4
ENG	Restricted ENG Elective (ENG 107 or 111)	3-4
		16-17
Winter Semester		
ELE 134	Motors and Controls	4
ELE 139A	Microprocessors A	2
ELE 150	PC Hardware Concepts and Troubleshooting	4
ELE 209	Operational Amplifiers	2
ELE 211	Basic Electronics	4
ELE 299	Customer Relations or	
ELE 174	ELE Co-Op I	1
HSC 131A	Community CPR	0.5
		17.5

Total credit hours for program: 33½-34½

Electronics Technology

Associate in Technical Studies Degree Program: Code ELET

Advisors: William Cleary, Gary Downen, Lawrence Kramer, Philip Mullins, Dale Petty, John Trame, Catherine Wagner

This program trains technicians for employment in almost any of the electrical/electronics cluster of occupations. By choosing the proper technical electives, students are trained to install, maintain and troubleshoot a wide range of equipment such as digital computer systems, telephone and data communications systems, automated industrial machine control systems, security systems, or instrumentation systems. In addition to technical skills, students are trained to communicate effectively in oral and written form and to exercise the interpersonal skills required to work successfully with customers, managers and co-workers.

Program Admission Requirements

1. Two years of high school algebra, or MTH 097 and MTH 169, or equivalent placement test
2. One year of high school Windows operating system or CIS 116 and CIS 117, or permision of program advisor

Course Number	Course Title	Credit Hours
Fall Semester		
ELE 104	Electrical Soldering	1
ELE 111	Electrical Fundamentals	4
ELE 137	Switching Logic	4
ELE 140	Software Concepts or	
CPS 171	Introduction to Programming with C++	4
ENG	Restricted ENG Elective (ENG 107 or ENG 111)	3-4
		16-17
Winter Semester		
ELE 134	Motors and Controls	4
ELE 139A	Microprocessors A	2
ELE 150	PC Hardware Concepts and Troubleshooting	4
ELE 174	ELE CO-Op or	
ELE 299	Customer Relations	1
ELE 209	Operational Amplifiers	2
ELE 211	Basic Electronics	4
		17
Fall Semester		
ELE 216A	Modem Hardware Installation, Configuration and Troubleshooting	2
ELE 225A	Network Installation and Troubleshooting	2
HSC 131A	Community CPR	0.5
HUM*	Restricted Humanities Electives	2
Technical[1]	Restricted Technical Electives	8
		14.5
Winter Semester		
ELE 240	Career Practices Seminar	2
ELE 250	Microprocessor Interfacing	4
PLS 112	Introduction to American Government	3
Technical1	Restricted Technical Elective	4
		13

Total credit hours for program: 62½ -63½

* *Choose from list of Humanities courses that meet elements 13 and 14 on page 60.*

NOTE: Please see a faculty advisor before selecting electives. A student, with department approval, may choose a restricted technical elective other than those listed.

[1]Restricted Technical Electives

CIS 121&221	Beginning UNIX and UNIX Tools and Scripts	4
ELE 155	Advanced Computer Concepts and Troubleshooting (usually offered fall semester)	4
ELE 204	National Electrical Code	4
ELE 205	Basic Telephony	4
ELE 224	Introduction to PLCs (usually offered fall semester)	4
ELE 225B	Advanced Networking Concepts	4
ELE 244	Motion Control	4
ELE 245	Transmission Systems	4
ELE 254	PLC Applications (usually offered spring semester)	4
ELE 275	Switching Systems (usually offered fall semester)	4
PHY 110	Applied Physics	4

Industrial Technology

Fluid Power Technology

Associate in Technical Studies Degree Program: Code FLPT

Advisors: George Agin, Gary Schultz

This program provides career training as a fluid power technician. As a technician in this field, one might work as a laboratory technician, production supervisor, field service technician, maintenance technician, machine repair technician, or design and development technician. A design technician sketches designs and prepares drawings for the development of fluid components and systems. In field service he/she installs and maintains fluid power systems or serves as a manufacturer's representative. Fluid power technicians work at inspecting, operating, and servicing fluid power equipment in various industrial applications. They also work at inside sales, outside sales, or servicing and testing fluid power equipment in various industrial applications.

Program Admission Requirements

One year of high school algebra (Algebra I), or MTH 097, or equivalent placement test

Course Number	Course Title	Credit Hours
First Semester		
ELE 111	Electrical Fundamentals	4
FLP 111	Fluid Power Fundamentals	4
MTH 169	Intermediate Algebra	4
MTT 111	Machine Shop Theory and Practice	4
		16
Second Semester		
COM 101	Fundamentals of Speaking	3
FLP 213	Hydraulic Controls	3
FLP 214	Basic Hydraulic Circuits	3
FLP 226	Pneumatics	3
WAF 100	Fundamentals of Welding	2
HUM*	Restricted Humanities Elective	1-3
		15-17

Third Semester

ENG 107	Technical Communications or	
ENG 111	English Composition I	3-4
IND 100	Technical Drawing	4
PHY 110	Applied Physics	4
ROB 111	CIM Fundamentals	4
		15-16

Fourth Semester

FLP 225	Fluid Power Instrumentation	3
HSC 131A	Community CPR	½
IND	Restricted IND Elective (above 100)	4
MTT 122	Machine Tool Operations and Set-Up I	4
PLS 112	Introduction to American Government	3
		14½

Total credit hours for program: 60½-63½

** Choose from list of Humanities courses that meet elements 13 and 14 on page 60.*

Hydraulic Assembly

Mastery Certificate Program: Code HYDA

Advisors: George Agin, Gary Schultz

This program provides career training as a hydraulic assembler. This person assembles machinery by studying blueprints to plan logical assembly sequence and positions, aligns parts, and bolts them together. Then he/she lays out hydraulic hose or piping on machine (away from moving parts) to facilitate servicing machine and connects hydraulic hose or piping to pumps and specific fittings.

Program Admission Requirement: None

Course Number	Course Title	Credit Hours
First Semester		
FLP 111	Fluid Power Fundamentals	4
MTH 151	Technical Algebra	4
MTT 111	Machine Shop Theory and Practice	4
WAF 111	Basic Oxy-Acetylene Welding	4
		16
Second Semester		
MTT 101	Blueprint Reading (Manufacturing)	3
COM 101	Fundamentals of Speaking	3
FLP 214	Basic Hydraulic Circuits	3
FLP 226	Pneumatics	3
MTT 101	Blueprint Reading (Manufacturing)	3
Elective	See program advisor for approval	2
		14

Total credit hours for program: 30

Machine Operation

Achievement Certificate Code MOPC

Advisors: Dean Avery, Burton Lowe

This one-semester program is designed to prepare students for entry-level employment in the machining industry or to give students a foundation to continue in the Machine Tool Technology degree program or another technical program. The student will develop skills in the areas of blueprint reading, statistical process control and hands on machine operation.

Program Admission Requirements

Mathematics competency at the MTH 039 level Approval of the Job Skills Academy

Course Number	Course Title	Credit Hours
MTT 101	Blueprint Reading for Manufacturing	3
MTT 111	Machine Shop Theory & Practice	4
NCT 112	Introduction to CNC Machining	3
QCT 093	Introduction to SPC Charting Techniques	1
		11

Total credit hours for program: 11

Machine Tool Technology

Associate in Technical Studies Degree Program: Code MTT

Advisors: Dean Avery, Burton Lowe

Machine Tool Technicians assist mechanical engineers in a broad range of functions involving the design, building, maintenance, and modification of many kinds of machines, mechanical devices, and tools. In general, machine tool technicians apply their knowledge of mechanical engineering technology to the problems of manufacturing industries, including the automotive and aerospace industries, the industrial equipment industry, and the whole range of consumer product manufacturers. The work of machine tool technicians includes reviewing blueprints and project instructions, analyzing costs and practical values of design plans, sketching rough layouts of proposed machines or machine parts, assembling new or modified devices or components, setting up and conducting tests of completed assemblies or components, analyzing test results, and writing report. In their work, Machine Tool Technicians use complex instruments, test equipment, and gauges. Machine Tool Technicians may also supervise the actual manufacturing process as it is carried out by skilled craft workers.

Program Admission Requirements

One year of high school algebra (Algebra I), or MTH 097, with a grade of "C" or better, or equivalent place test

Course Number	Course Title	Credit Hours
First Semester		
MTH 151	Technical Algebra or	
MTH 169**	Intermediate Algebra	4
MTT 101	Blueprint Reading (Manufacturing)	3
MTT 111	Machine Shop Theory and Practice	4
NCT 112	Intro to CNC Machining	3
ROB 111	CIM Fundamentals	4
		18

Second Semester

IND 100	Technical Drawing or	
IND 111	Industrial Drafting	4
MTH 152	Technical Geometry and Trigonometry or	
MTH 178**	General Trigonometry	3-4
MTT 103	Introduction to Materials	3
MTT 122	Machine Tool Operations and Set-Up I	4
NCT 121	Manual Programming and NC Tool Operation	4
		18-19

Third Semester

ENG 107	Technical Communications or	
ENG 111**	Composition I	3-4
IND 216	Intro to CAD	2
MTT 123	Machine Tool Operations and Set-Up II	4
NCT 122	Advanced Manual Programming and NC Tool Operation	4
SCI 100	Intro to Natural Sciences	1
		14-15

Fourth Semester

HSC 131A	Community CPR	½
HUM*	Restricted Humanities Elective	1-3
MTT 201	Machine Tool Technology	4
NCT 236	CAM Machine Tool Programming	4
PLS 112	Introduction to American Government	3
QCT 101	Process Quality Control	3
		15½-17½

Total credit hours for program: 65½-69½

** Choose from list of courses which meet elements 13 and 14 on page 60.*
***Students planning to transfer to EMU or other four-year institutions should choose these courses.*

Numerical Control Machine Operations

Mastery Certificate Program: Code NC

Advisors: Roger Dick, Jeffrey Donahey

This Mastery Certificate program is designed to train persons to set up and operate Numerical Controlled machine tools. CNC operators must have a working knowledge of the relationship between part programs and machine tool operation. Precision measurement, blueprint interpretation, and CNC program editing are among the specific skills presented and practiced in this program. The program can serve as an entry into the Numerical Control Technology (NCTT) Associate Degree program.

Program Admission Requirements: None

Course Number	Course Title	Credit Hours

First Semester

MTT 101	Blueprint Reading (Manufacturing) or	
IND 100	Technical Drawing	3-4
MTH 151	Technical Algebra	4
MTT 111	Machine Shop Theory and Practice	4
NCT 112	Intro to CNC Machining	3
		14-15

Second Semester

ENG	Restricted ENG Requirement (107 or 111)	3-4
MTH 152	Technical Geometry and Trigonometry	4
MTT 122	Machine Tool Operations and Set-Up I	4
NCT 121	Manual Programming and NC Tool Operation	4
		15-16

Third Semester

NCT 122	Advanced Manual Programming and NC Tool Operation	4

Total credit hours for program: 33-35

Numerical Control Technology

Associate in Technical Studies Degree Program: Code NCTT
Advisors: Roger Dick, Jeffrey Donahey

This program is designed to provide career training as a Numerical Control Technician. Numerical Control Technicians can be considered the link between design and actual manufacture of products by firms using computer controlled equipment. They set up and operate various types of numerical control machine tools and have the primary responsibility of writing the programs which control the machine motion required to manufacture parts. They have a working knowledge of the many N/C machine tool languages used in industry. They write programs directly in the format used by the N/C machine tool (manual programming) or by using various computer-assisted languages and software. Numerical Control Technicians are trained in the use of Computer Aided Design (CAD) hardware and software and are able to generate tool paths on data created on CAD systems. They are also trained in machining techniques, precision measurement, blueprint interpretation and industrial processes. Often Numerical Control Technicians are required to design and manufacture jigs and fixtures used to hold parts which have been designed using CAD software.

Program Admission Requirements: None

Course Number	Course Title	Credit Hours
First Semester		
MTH 151	Technical Algebra or	
MTH 169	Intermediate Algebra	4
MTT 101	Blueprint Reading	3
MTT 111	Machine Tool Theory and Practice	4
NCT 112	Introduction to CNC Machining	3
ROB 111	CIM Fundamentals	4
		18
Second Semester		
IND 100	Technical Drawing or	
IND 111	Industrial Drafting	4
MTH 152	Applied Geometry & Trigonometry or	
MTH 178**	General Trigonometry	3-4
MTT 103	Intro to Materials	3
MTT 122	Machine Tool Operation and Setup I	4
NCT 121	Manual Programming NC Tool	4
		18-19
Third Semester		
ENG 107	Technical Communication or	
ENG 111**	English Composition	3-4
IND 216	Introduction to CAD	2
NCT 122	Advanced Manual Programming & N/C Tool Operation	4
NCT 236	CAM Machine Tool Programming	4
QCT 101	Process Quality Control	3
		16-17
Fourth Semester		
HSC 131A	Community CPR	½
NCT 247	Advanced CAM Machine Tool Programming	4
PLS 112	Introduction to American Government	3
ROB 260	CIM Applications	4
SCI 100	Intro to Natural Sciences	1
HUM*	Humanities Elective	1-3
		13½-15½

Total credit hours for program: 65½-69½

** Choose from list of Humanities courses that meet elements 13 and 14 on page 60.*
*** Students planning to transfer to EMU should elect these courses.*

Robotic Technology

Associate in Technical Studies Degree Program: Code ROB
Advisors: George Agin, Gary Schultz

This program trains automated equipment technicians in robotics to assemble, install and maintain electrical and electronic, electro-mechanical, pneumatic and hydraulic components on computer-assisted multi-purpose machinery and equipment using hand tools, electronic testing instruments, diagrams and prints. Students who complete the program will be prepared to enter the field with job entry skills.

Program Admission Requirements
The following high school courses or equivalents must be completed with a grade of "C" or better:
1 One year of high school algebra, or MTH 097, or MTH 151
2 One year of high school geometry, or MTH 152
3. One semester of high trigonometry, or MTH 152, or MTH 177

Course Number	Course Title	Credit Hours
First Semester		
ELE 111	Electrical Fundamentals	4
FLP 111	Fluid Power Fundamentals	4
IND 100	Technical Drawing	4
ROB 111	CIM Fundamentals or	
ROB 121	Robotics I	3-4
		15-16
Second Semester		
FLP 213	Hydraulic Controls	3
FLP 214	Basic Hydraulic Circuits	3
FLP 226	Pneumatics	3
PHY	Physics Elective (110 or 111)	4
ROB 212	Robotics II	4
		17
Third Semester		
ELE 137	Switching Logic	4
IND 107	Mechanisms	4
PSY 150	Industrial Psychology	3
ROB 223	Robotics III	4
SCI 100	Intro to Natural Sciences	1
		16
Fourth Semester		
ELE 224	Introduction to PLC's	4
ENG	Restricted ENG Elective (ENG 107 or 111)	3-4
HUM*	Restricted Humanities Elective	1-3
PLS 112	Introduction to American Government	3
ROB 224	Robotics IV	4
		15-18

Total credit hours for program: 63-67

** Choose from list of Humanities courses that meet elements 13 and 14 on page 60.*

Toolroom Machine Operation

Mastery Certificate Program: Code TOMO

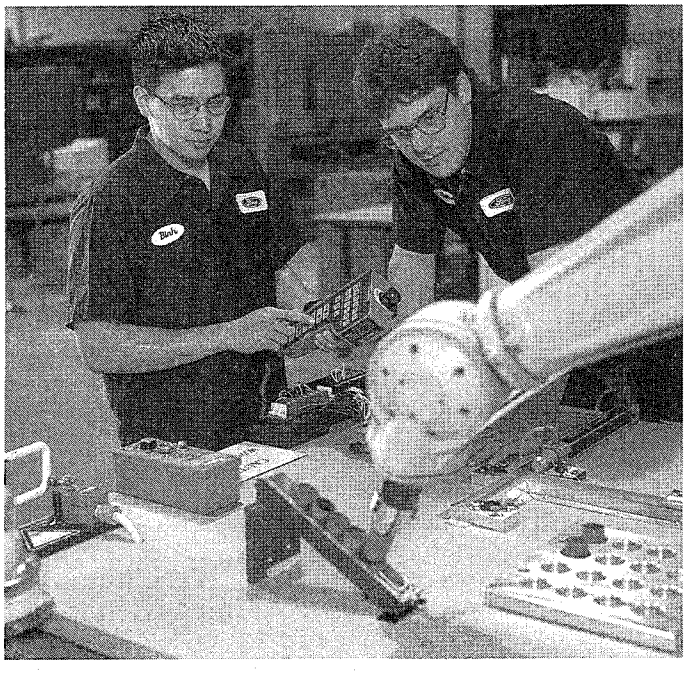
Advisors: Dean Avery, Burton Lowe

This program is designed to provide career training as a toolroom machine operator. Machine tools are stationary, power-driven machines which hold the metal that is to be cut, milled, ground or drilled. Some of the more common machine tools are engine lathes, saws, grinding machines, drilling machines, and milling machines. These tools are used to machine metal to exact dimensions. Semi-skilled workers operate machine tools on which the speeds and operation sequence have been set by a more skilled employee. They tightly secure the metal stock in the machine then check for precision through the use of measuring devices. Semi-skilled operators usually work with a single type of machine. They plan and set up the correct sequence of operation based on blueprint information. They adjust speed and other controls and select the proper cutting tools or instruments for the operation. They must also know how to use special attachments for the machine, plus be able to use precision measuring instruments.

Program Admission Requirements: None

Course Number	Course Title	Credit Hours
First Semester		
ENG	Restricted English Elective (ENG 107 or 111)	3-4
MTH 151	Technical Algebra	4
MTT 101	Blueprint Reading (Manufacturing)	3
MTT 103	Introduction to Materials	3
MTT 111	Machine Shop Theory and Practice	4
		17-18
Second Semester		
IND 100	Technical Drawing or	
IND 111	Industrial Drafting	4
MTH 152	Technical Geometry and Trigonometry	4
MTT 122	Machine Tool Operation and Set-Up I	4
ROB 111	CIM Fundamentals	4
		16

Total credit hours for program: 33-34



Visual Arts Technology

Digital Prepress

Mastery Certificate Program: Code DPPC

Advisor: Terry Abrams

This program provides career training in digital prepress. Digital prepress technicians work with computer generated publications and graphic files to ensure proper imaging to film or direct-to-plate. File preparation for printing includes: image links, font use, trapping, configuring resolutions, and setting up for final output. Digital prepress technicians work for printers, service bureaus, book manufacturers, publishers, design agencies and color separators.

Program Admission Requirements

One year of high school Macintosh graphics or GDT 105 or permission of program advisor.

Course Number	Course Title	Credit Hours
First Semester (Spring/Summer I))		
ENG/COM	Restricted ENG/COM Elelctive (ENG 091, 100, 101,107, 111, 122, COM 101, or 102)	3-4
GDT 117	Introduction to PageMaker	2
GDT 118	Advanced PageMaker	2
		7-8
Second Semester (Fall)		
DPP 111	Digital Prepress I	4
DPP 117	Introduction to Printing	4
GDT 125	Introduction to QuarkXPress	2
GDT 126	Advanced QuarkXPress	2
GDT 137	Introduction to Illustrator	2
GDT 138	Advanced Illustrator	2
		16
Third Semester (Winter)		
DPP 122	Digital Prepress II	4
DPP 134	Planning and Finishing	2
GDT 141	Introduction to Photoshop	2
GDT142	Advanced Photoshop	2
GDT 233	Print Estimating	2
		12

Total credit hours for program: 35-36

Graphic Design Technology - Design Option

Associate in Technical Studies Degree Program: Code GDTD

Advisors: Lind Babcock, Dennis Guastella

This program provides career training as a graphic artist with an emphasis on design. Graphic artists work with typographers, printers, and other specialists in the graphic arts. They are artists for commerce. They work on projects and commissions with definite objectives for clients and employers to communicate, inform, instruct, or sell. They may work in package design, professional publications, book illustrations, annual reports, magazines, trade publications, desktop publishing, and in-house publications. Multi-talented individuals who can write copy, are experienced in design and art production, and understand marketing techniques are in greatest demand. A creative or artistic ability is required for these careers as well as such qualities as resourcefulness, experimentation, and inquiry. Basic skill competencies in keylining, paste-up, typography, graphic communication, knowledge of materials (paper and ink), fundamentals of design, computer graphics, and illustration evident in a portfolio are minimum prerequisites for careers in graphic design.

Program Admission Requirements

One year of high school Macintosh graphics or GDT 105 or permission of program advisor

Course Number	Course Title	Credit Hours
First Semester (Fall)		
ART 112	Basic Design I	4
ENG	English Requirement (107 or 111)	3-4
GDT 117	Introduction to PageMaker	2
GDT 118	Advanced PageMaker	2
GDT 137	Introduction to Illustrator	2
GDT 138	Advanced Illustrator	2
		15-16
Second Semester (Winter)		
GDT 100	Typography	4
GDT 101	Design Survey	3
GDT 125	Introduction to QuarkXPress	2
GDT 126	Advanced QuarkXPress	2
GDT 141	Intorduction to Photoshop	2
GDT 142	Advanced Photoshop	2
HUM*	Restricted Humanities Elective	2-3
		17-18
Third Semester (Fall)		
GDT 112	Graphic Communications	4
GDT 220	Publication Design	4
GDT 239	Imaging & Illustration	4
PLS 112	Introduction to American Government	3
SCI 100	Introduction to Natural Sciences	1
		16
Fourth Semester (Winter)		
GDT 200	Design & Publishing on the Internet	4
GDT 230	Professional Practices	2
GDT 252	Advanced Digital Studio	3
MTH 151	Technical Algebra (or MTH 163 - Business Math)	3-4
GDT[1]	Restricted GDT Elective	4
		16-17

Total credit hours for program: 64-67

** Choose from list of Humanities courses that meet elements 13 and 14 on page 60.*

[1]Restricted GDT Electives

DPP 111	Digital Prepress I	4
DPP 122	Digital Prepress II	4
GDT 174	GDT Co-op I	2-4
GDT 201	Graphic Illustration	4
GDT 236	Specialized Study	2-4
GDT 243	3-D Computer Illustrated Rendering	4
GDT 245	Computer-Aided Painting	4
GDT 246	Introduction to Multimedia	4
GDT 274	GDT Co-op II	2-4
PHO 111	Photography I	4

Graphic Design Technology - Illustration Option

Associate in Technical Studies Degree Program: Code GDTI

Advisor: Dennis Guastella

This program provides career training as an illustrator of commercial and technical art. Illustration requires understanding and visualizing technical information, attention to detail and an interest in precision drawing. The program places emphasis on the design and execution of a variety of subjects utilizing a variety of media and methods to produce a portfolio of finished art to present to a potential employer. Employment for the illustrator is found in medium to large manufacturing and technology-based companies that require staff to create visuals for manuals, advertising and presentation graphics. Other employers include newspaper art departments, department stores, advertising agencies, and design studios. Projects utilize methods and materials for producing posters, book illustrations, product presentations, perspective and dimensional drawings. Computer generated illustration is included in the program to keep students abreast of the latest technology in the field.

Program Admission Requirements

One year of high school Macintosh graphics or GDT 103 and GDT 105 or permission of program advisor.

Course Number	Course Title	Credit Hours
First Semester (Fall)		
ART 111	Basic Drawing I	4
ENG	Restricted ENG Elective (ENG 107 or ENG 111)	3-4
GDT 101	Design Survey	3
GDT 137	Introduction to Illustration	2
GDT 138	Advanced Illustration	2
		14-15
Second Semester (Winter)		
GDT 100	Typography I	4
GDT 141	Introduction to Photoshop	2
GDT 142	Intermediate Photoshop	2
GDT 201	Graphic Illustration	4
PHO 111	Basic Photography	4
SCI 100	Intro to Natural Sciences	1
		17
Third Semester (Fall)		
GDT 112	Graphic Communications	4
GDT[1]	Restricted GDT Elective	4
GDT 245	Computer-Aided Painting	4
HUM*	Restricted Humanities Elective	2-3
MTH 151	Technical Algebra (or MTH 163 - Business Math)	3-4
		17-19

Fourth Semester (Winter)

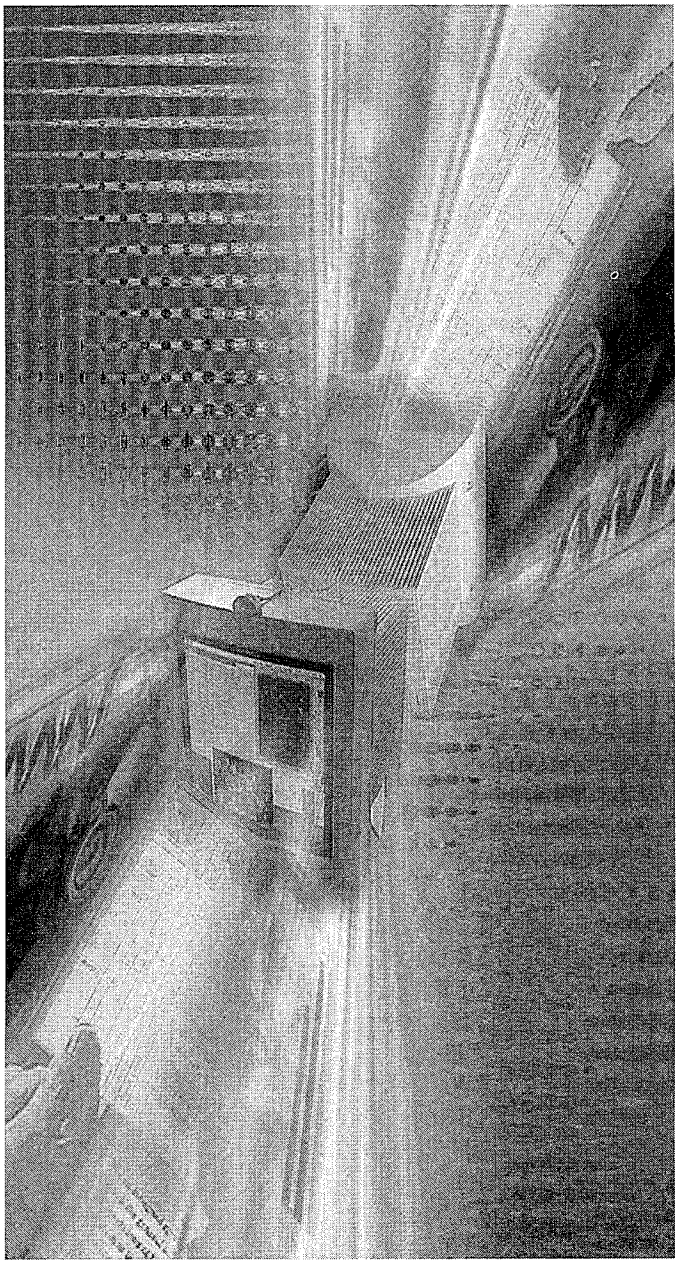
GDT 222	Commercial Illustration	4
GDT 230	Professional Practices	2
GDT 239	Imaging & Illustration	4
GDT 243	3-D Computer Illustrated Rendering	4
PLS112	Introduction to American Government	3
		17

Total credit hours for program: 65-68

** Choose from list of Humanities courses that meet elements 13 and 14 on page 60.*

[1]Restricted GDT Electives

ART 140	Life Drawing	4
ART 122	Advanced Drawing	4
DPP 111	Digital Prepress I	4
DPP 122	Digital Prepress II	4
GDT 117	Introduction to PageMager	4
GDT 118	Advanced PageMaker	4
GDT 225	Introduction to QuarkXPress	4
GDT 226	Advanced QuarkXPress	4
GDT 246	Introduction to Multimedia	4
PHO	Photography courses	4



Photographic Technology

This program has two options which provide career training in photographic technology.

Photographic Technology

Associate in Technical Studies Degree Program: Code PHOT

Advisors: Terry Abrams, Jennifer Baker

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.

Program Admission Requirements: None

Course Number	Course Title	Credit Hours
First Semester		
ENG 100	Communication Skills or	
ENG 111	English Composition I	4
PHO 103	History of Photography	3
PHO 111	Photography	4
PHO 117	Introduction to the Studio	3
PLS 112	Introduction to American Government	3
		17
Second Semester		
MTH 151	Technical Algebra	4
PHO 122	Photography II	4
PHO 124	Color Photography	4
PHO 127	Digital Photo Imaging	4
		16
Third Semester		
BMG 200	Human Relations in Business & Industry or	
COM 102	Interpersonal Communications	3
PHO 210	Alternative Processes/New Technologies	3
PHO 211	Large Format Photography	3
PHO 219	Photo Design or	
ART 112	Basic Design	3-4
PHO[1]	Restricted Photography Elective	3
		15-16
Fourth Semester		
BMG[2]	Restricted Business Elective	3-5
PHO 230	Specialized Study	3
PHO 231	Portfolio Seminar	4
PHO	Photography Elective	6
SCI 100	Introduction to Natural Science	1
		17-19

Total Credit hours for program: 65-68

[1]Restricted Photography Electives

PHO 101	Photography & Environment	3
PHO 115	Photo Retouching	3
PHO 116	Studio Portraiture	3
PHO 174	PHO Co-op I	3
PHO 216	Environmental Portraiture	3
PHO 220	Commercial Product Photography	3
PHO 227	Photojournalism	3
PHO 274	PHO Co-op II	3

[2]Restricted Business Electives

BMG 109	Introduction to Home/Small Business Management	3
BMG 140	Introduction to Business	3
BMG 208	Principles of Management	3
BMG 209	Home/Small Business Planning	5
BMG 250	Principles of Marketing	3

Photographic Technology - Marketing Option

Associate in Technical Studies Degree Program: Code PHOM

Advisors: Terry Abrams, Jennifer Baker

The marketing option of the photographic technology program places a strong emphasis on business skills. This program is designed for students seeking self employment in photography or job opportunities in the retail and manufacturing areas of the field.

Program Admission Requirements: None

Course Number	Course Title	Credit Hours
First Semester (Fall)		
BMG 140	Introduction to Business	3
ENG 111	Composition I	4
PHO 103	History of Photography	3
PHO 111	Photography I	4
PHO 117	Introduction to the Studio	3
		17
Second Semester (Winter)		
COM 102	Interpersonal Communications	3
MTH 151	Technical Algebra	4
PHO 122	Photography II	4
PHO 124	Color Photography	4
PHO 127	Digital Photo Imaging	4
		19
Third Semester (Fall)		
BMG 250	Principles of Marketing	3
CIS 110	Business Computer Systems	4
PHO 211	Large Format Photography	3
PLS 112	Introduction to American Government	3
PHO[1]	Restricted Photography Elective	3
		16
Fourth Semester (Winter)		
BMG 109	Introduction to Home/Small Business Management	3
BMG 160	Principles of Sales	3
BMG 270	Advertising Principles	3
PHO 231	Portfolio Seminar	4
PHO[1]	Restricted Photography Elective	3
SCI 100	Introduction to Natural Sciences	1
		17

Total credit hours for program: 69

[1]Restricted Photography Electives

PHO 101	Photography and Environment	3
PHO 115	Photo Retouching	3
PHO 116	Studio Portraits	3
PHO 174	PHO Co-op Education I	3
PHO 210	Alternative Processes	3
PHO 216	Environmental Portraiture	3
PHO 219	Photographic Design	3
PHO 220	Commercial Product Photography	3
PHO 227	Photojournalism	3
PHO 274	PHO Co-op II	3

Photographic Assisting

Mastery Certificate Program: Code PHOA

Advisors: Terry Abrams, Jennifer Baker

This program provides students with a thorough introduction to fundamental photographic concepts and techniques used in traditional silver and digital photographic applications. Students work with small and medium format cameras in black and white and color imaging. The program includes instruction in darkroom and computer-based image processing. Emphasis in this program is placed on establishing strong foundational photographic skills. Upon completion students are prepared to work as photographic assistants.

Program Admission Requirements: None

Course Number	Course Title	Credit Hours
First Semester		
MTH 151	Technical Algebra	4
PHO 111	Photography I	4
PHO 117	Introduction to the Studio	3
ENG 100	Communication Skills or	
COM 102	Interpersonal Communication	3-4
		14-15
Second Semester		
BMG	Restricted Business Elective (BMG 160, 208, 209 or 250)	2-3
PHO 122	Photography II	4
PHO 124	Color Photography	4
PHO 127	Digital Photo Imaging	4
PHO	Restricted Photography Elective (PHO 116, 211, 216 or 220)	3
		17-18

Total credit hours for program: 31-33

Welding and Fabrication Technology

Welding Maintenance Mechanics

Mastery Certificate Program: Code WLDM

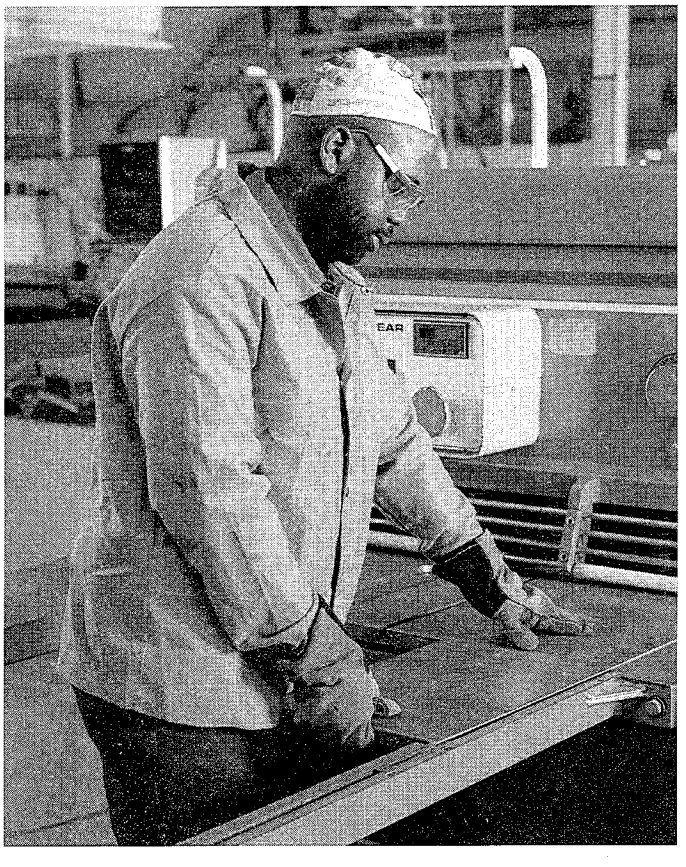
Advisors: William Figg, Clyde Hall

This program provides career training as a welding maintenance mechanic. Students weld metal parts together according to layouts, blueprints, or work orders using gas welding or brazing and any combination of arc-welding processes. Students perform related tasks such as frame cutting and grinding. They may also repair broken or cracked parts, fill holes and increase size of metal parts.

Program Admission Requirements: None

Course Number	Course Title	Credit Hours
First Semester		
MTH 090	Occupational Math	3
WAF 111	Basic Oxy-Acetylene Welding	4
WAF 112	Basic Arc Welding	4
WAF 200	Layout Theory For Welders	2
WAF 210	Welding Metallurgy	3
		16
Second Semester		
COM 101	Fundamentals of Speaking	3
WAF 123	Advanced Oxy-Acetylene Welding	4
WAF 124	Advanced Arc Welding	4
WAF 215	Advanced TIG and MIG Welding	4
WAF 227	Basic Fabrication	3
		18

Total credit hours for program: 34



Welding Technology

Associate in Technical Studies Degree Program: Code WLDT

Advisors: William Figg, Clyde Hall

This program provides career training as a welding and fabrication technician. Persons planning careers as welders or cutters need manual dexterity, good eyesight, and good coordination. They should be able to concentrate on detailed work for long periods. These technicians position, fit, and weld fabricated, cast, and forged components to assemble structural forms such as machinery frames, tanks, pressure vessels, furnace shells, and building and bridge parts according to blueprints and knowledge of welding characteristics of metal. They also select equipment and plan layout, assembly and welding, and apply their knowledge of geometry, physical properties of metal, effects of heat, allowances for thicknesses, machining weld shrinkage, and welding techniques. They lay out, position, align, and fit components together and secure parts in position for welding. They set up equipment and welding parts using arc, gas-shielded arc, TIG and MIG, or gas-welding equipment. Assembling and repairing parts or products by using a cutting torch, straightening press and handbrake are also components of this technician's job. Upon completion of this program, students can also be foremen, sales representatives, or specialists.

Program Admission Requirements: One year of high school algebra (Algebra I), or MTH 097, or equivalent placement test

Course Number	Course Title	Credit Hours
First Semester		
ENG	Restricted ENG Elective (100 or 111)	4
MTT 100	Machine Shop Theory	3
WAF 106	Blueprint Reading for Welders	3
WAF 111	Basic Oxy-Acetylene Welding	4
WAF 112	Basic Arc Welding	4
		18
Second Semester		
IND 100	Technical Drawing	4
MTH 177	Triangle Trigonometry	3
WAF 123	Advanced Oxy-Acetylene Welding	4
WAF 124	Advanced Arc Welding	4
WAF 200	Layout for Welders	2
		17
Spring/Summer Semester		
HSC 131A	Community CPR	½
HUM*	Restricted Humanities Elective	1-3
		1½-3½

Third Semester

IND 112	Descriptive Geometry	4
PSY 150	Industrial Psychology	3
WAF 210	Welding Metallurgy	3
WAF 215	Advanced TIG and MIG Welding	4
WAF 227	Basic Fabrication	3
		17

Fourth Semester

CIS 100	Intro to Computers	3
FLP 111	Fluid Power Fundamentals	4
PLS 112	Introduction to American Government	3
WAF 226	Specialized Welding Procedures	4
WAF 229	Shape Cutting Operations	3
		17

Total credit hours for program: 70½-72½

** Choose from list of Humanities courses that meet elements 13 and 14 on page 60.*

Technical Training

Trade Related Instruction Apprentice and Employee Training

Apprenticeship training is on-the-job training with related instruction designed to ensure that each apprentice not only masters skilled tasks but does so with confidence and precision. Today, apprentices are trained in more than 300 occupations. Apprenticeships offer an alternative route to training and employment. They differ from other training methods in several ways. First, when individuals enter an apprenticeship training program they are hired in jobs for which vacancies exist and are paid a percentage of the journeyperson's (a person who has completed apprenticeship training) rate, usually starting at about 50% and increasing as additional skills are mastered. Second, the apprentice is under the supervision of an individual with demonstrated ability in the tasks to be learned. Third, the formalized on-the-job training is reinforced with appropriate classroom instruction. Fourth, upward mobility is built into the concept.

Manufacturing and Construction

The main purpose of the Trade Related Instruction Program is to provide manufacturing and construction firms with the opportunity to participate in training programs which assist their employees in becoming more skilled.

Apprentice Training and Employee Training

Required related instruction is provided for most apprenticeable trades. The College's Director of Technical Training works directly with the apprentice and the sponsoring firm to meet these requirements. The related instruction program has been approved by the Bureau of Apprenticeship and Training of the U.S. Department of Labor. Sponsoring firms are invited to contact the Director concerning individual employees who wish to participate.

Pre-Apprenticeship Training

Individuals who wish to enter an apprenticeship program, but who have not passed the required entrance examination, are invited to contact the College counseling staff or the Director of Technical Training. An individual pre-apprenticeship curriculum can be arranged which helps prepare for most industrial apprenticeship entrance examinations. Placement cannot be guaranteed in an apprenticeship program. Placement is at the mutual discretion of employers, employees and organizations representing the skill trades involved.

Construction Management

Associate in Applied Science Degree Program: Code CON

Advisors: Les Pierce, Mike Pogliano, Patricia Stegall, James Teevens

This program prepares students for supervisory and/or mid-management positions in the construction industry. Construction managers are responsible for a wide range of duties including project management and supervision, estimating and bid preparation, office supervision, scheduling, jobsite supervision and material procurement. This position interfaces with owners, contractors, subcontractors, vendors and inspectors. This program is designed as a two-year career entry degree program. Those students seeking to transfer to a baccalaureate program should confer with a program advisor to select courses that will meet transfer requirements.

Program Admission Requirement: none

Course Number	Course Title	Credit Hours
First Semester (Fall)		
ARC 111	Architectural Drawing I	6
ARC 117	Construction Materials	3
CON 102	Construction Theory and Practice	4
MTH 163	Business Math	3
		16
Second Semester (Winter)		
ARC 109	Site Layout	3
BMG 140	Introduction to Business	3
CIS 103	MSDOS Commands	1
CON 202	Construction Theory and Practice II	4
		11
Third Semester (Spring/Summer)		
ARC 100	Specifications	1
PHY 110	Applied Physics	4
		5
Fourth Semester (Fall)		
ARC 227	Estimating Construction Costs	3
BMG 200	Human Relations in Business and Industry	3
ENG 100	Communication Skills	4
PLS 150	State and Local Government	3
		13
Fifth Semester (Winter)		
ACC 111	Principles of Accounting I	3
ARC 199	On the Job Training	2-4
CIS 100	Introduction to Computers	3
PSY 100	Introduction to Psychology	3
HUM[1]	Restricted Humanities Elective	1-4
Science[2]	Restricted Science Elective	3-5
		15-22

Total credit hours for program: 60-67

[1]Restricted Humanities Electives

ANT 201	Introduction to Cultural Anthropology	3
ART 130	Art Appreciation	3
ART 143	Art and Culture of Afro-America	3
DAN 110	Afro-American Dance	1
ENG 140, 160, 170, 181, 200, 211, 212, 213	(see course descriptions for titles)	3
FRN 111	First Year French I	4
GRM 111	First Year German I	4
HUM 101, 102, 150 (see course descriptions for titles)		3
MUS 180, 183 (see course descriptions for titles)		3
PHO 103	History of Photography	3
RUS 111	First Year Russian I	4
SPN 111	First Year Spanish I	4

[2]Restricted Science Electives

AST 111	General Astronomy	3
BIO 101	Concepts of Biology	4
BIO 102	Human Biology	4
BIO 111	Anatomy/Physiology	5
BIO 227	Zoology	4
BIO 228	Botany	4
GEO 100	Geography and the Environment	3
GLG 100	Intro to Earth Science	4
PHY 105	Conceptual Physics	4

Journeyperson Industrial

Associate in Technical Studies Degree Program: Code JPI

This Associate Degree can be awarded to skilled tradespersons upon earning 60 hours or more including the courses listed below. All credits earned in Trade Related Instruction that are part of a bona fide apprenticeship program registered with the U.S. Department of Labor, Bureau of Apprenticeship and Training may be applied to the Journeyperson Industrial Degree. Credit coursework completed at other institutions offering trade related instruction is evaluated and may be applicable.

Program Admission Requirements

— Passing score on apprenticeship entrance exam

— Sponsorship of qualified firm

Course Number	Course Title	Credit Hours
CIS 100	Intro to Computers	3
ENG 111	Composition I	4
MTH	Restricted Math Elective (MTH 151, 160, 169 or 179)	4
PLS 112	Introduction to American Government	3
SCI 100	Intro to Natural Sciences	1
HUM*	Restricted Humanities Elective	1-3
TRI**	Restricted Trade Related Instruction Electives	44

Total credit hours for program: 60-62

** Choose from list of Humanities courses that meet elements 13 and 14 on page 60.*

*** See Program Advisor before choosing.*

Refrigeration and Air Conditioning

Associate in Technical Studies Degree Program: Code RAC
Advisor: Les Pierce

This is primarily a trade-related instruction program. Its purpose is to upgrade persons currently employed in this industry; however, students who are not currently employed in the industry are welcome. Courses are offered in the evening only. All training materials are provided by the Refrigeration Service Engineer's Society (RSES). Students should expect to pay approximately $125 per term in addition to tuition. RSES is a non-profit international educational organization whose sole purpose is the education and training of its members, assisting them in keeping their skills up to date, thereby offering better service to the public. The program is guided by an Advisory Committee consisting of journeypersons and contractors and is offered in cooperation with the local chapter of the Refrigeration Service Engineers Society. Consent of the program advisor is required for registration.

Program Admission Requirements

Consent of RAC program advisor

Course Number	Course Title	Credit Hours
CIS 100	Intro to Computers	3
ENG	Restricted ENG Electivet (100 or 111)	4
HTG 111	Heating Fundamentals	3
HTG 122	Heating Systems	3
HTG 213	Heating Controls	3
MTH[1]	Restricted Math Elective	3-4
PLS 112	introduction to American Government	3
RAC 111	Refrigeration I	5
RAC 122	Refrigeration II	5
RAC 123	Systems Lab I	5
RAC 124	Basic Controls	5
RAC 212	Systems Lab II	3
RAC 213	Air Conditioning	5
RAC 214	Control Systems	5
RAC 215	Troubleshooting Controls	3
RAC 216	Systems Lab III	5
SCI 100	Intro to Natural Sciences	1
WAF 104	Soldering and Brazing	2
HUM*	Restricted Humanities Elective	1-3

Total credit hours for program: 67-70

** Choose from list of Humanities courses that meet elements 13 and 14 on page 60.*

[1]Restricted Math Electives

MTH 151	Technical Algebra	4
MTH 160	Statistics	4
MTH 163	Business Math	3
MTH 169	Intermediate Algebra	4

Quality Control Technology

The function of Quality Control has changed significantly in recent years. Statistical Process Control (SPC) skills used by the Quality Control Engineer or Analyst are now essential to keep manufacturers competitive in both quality and productivity. In today's business environment, the Quality Control professional is no longer looked upon as the "Policeman" commissioned to catch errors or defects after they occur. Instead, Quality Control is the practice of preventing defects, reducing quality defect losses, increasing productivity through more informed process management and improving quality in general. Designed by a highly qualified Quality Control Advisory Committee, the courses offer an opportunity for specialization in this important and expanding field. A large choice of electives enables students to train for either a technical or a supervisory position.

Quality Control Technology - Electronics Option

Associate in Technical Studies Degree Program: Code QCTE

Advisor: Les Pierce

Program Admission Requirements:

- One year of high school algebra (Algebra I) or MTH 097, or equivalent placement test
- One year of high school Windows Operating System, with a grade of "C" or better, or CIS 116 and CIS 117, or permission of program advisor

Course Number	Course Title	Credit Hours
CIS/CPS[1]	Restricted CIS/CPS Electives	6-8
ELE 111	Electrical Fundamentals	4
ELE 150	PC Concepts and Troubleshooting	4
ELE 211	Basic Electronics	4
ELE	Restricted Ele Electives (ELE 100 or above)	8
ENG[2]	Restricted ENG Elective (ENG 100, 107, 111 or 122)	7-8
HUM*	Restricted Humanities Elective	1-3
MTH 169	Intermediate Algebra	4
PLS 112	Introduction to American Government	3
SCI[3]	Restricted Science Elective	1-4
QCT 101	Process Quality Control	3
QCT 122	Sampling Quality Control	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

Total credit hours for program: 60-68

** Choose from list of Humanities courses that meet elements 13 and 14 on page 60.*

[1]Restricted CIS/CPS Electives

CIS 100	Introduction to Computers	3
CIS 110	Business Computer Systems	4
CIS 118	MS DOS for Technicians	2
CIS 282	Small System Data Base	3
CPS 171	Introduction to Programing with C++	4
CPS 187	Introduction To Fortran	4
CPS 290	Object Oriented Programming	4

[2]Restricted English Electives

ENG 100	Communication Skills	4
ENG 107	Text Writing	3
ENG 111	Composition I	4
ENG 122	Composition II	3

[3]Restricted Science Electives

BIO 101	Concepts of Biology	4
BIO 102	Human Biology	4
SCI 100	Introduction to Natural Science	1

Quality Control Technology - Management Option

Associate in Technical Studies Degree Program: Code QCTM

Advisor: Les Pierce

Program Admission Requirements

One year of high school algebra (Algebra I) or MTH 097, or equivalent placement test.

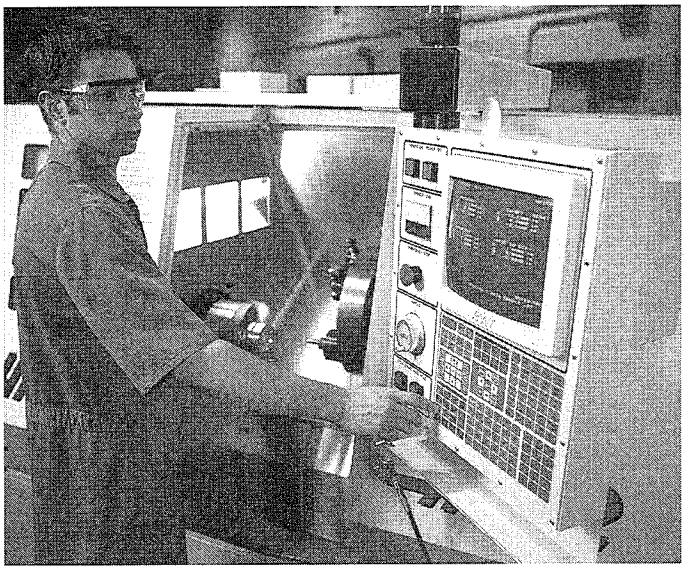
Course Number	Course Title	Credit Hours
ACC 111	Principles of Accounting I	3
ACC 122	Principles of Accounting II	3
CIS 100	Introduction to Computers	3
COM 101	Fundamentals of Speaking	3
CPS 171	Introduction to Programing with C++	4
ECO 211	Principles of Economics I	3
ECO 222	Principles of Economics II	3
ENG 111	Composition I	4
ENG 122	Composition II	3
MTH 160	Basic Statistics	4
MTH 169	Intermediate Algebra	4
PLS	Restricted PLS Elective (112 or 150)	3
HUM*	Restricted Humanities Elective	1-3
SCI[1]	Restricted Science Elective	1-4
QCT 101	Process Quality Control	3
QCT 122	Sampling Quality Control	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

Total credit hours for program: 60-65

** Choose from list of Humanities courses that meet elements 13 and 14 on page 60.*

[1]Restricted Science Electives

BIO 101	Concepts of Biology	4
BIO 102	Human Biology	4
SCI 100	Introduction to Natural Sciences	1



Quality Control Technology - Science and Engineering Option

Associate in Technical Studies Degree Program: Code QCTS

Advisor: Les Pierce

Program Admission Requirement: The following high school courses or the equivalents must have been completed with a grade of "C" or better:

- One year of high school algebra (Algebra I), or MTH 097
- One semester of high school chemistry, or CEM 057

Course Number	Course Title	Credit Hours
CEM 111	General Chemistry I	4
CEM 122	General Chemistry II	4
CIS 100	Introduction to Computers	3
ENG 111	Composition I	4
ENG 122	Composition II	3
MTH 169	Intermediate Algebra	4
MTH 178	General Trigonometry	3
MTH 179	Precalculus	4
MTH 191	Calculus I	5
PHY 111	General Physics I	4
PHY 122	General Physics II	4
PLS 112	Introduction to American Government	3
HUM*	Restricted Humanities Elective	1-3
SCI	Restricted Science Elective (BIO 101, BIO 102, or SCI 100)	1-4
QCT 101	Process Quality Control	3
QCT 122	Sampling Quality Control	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

Total credit hours for program: 65-70

** Choose from list of Humanities courses that meet elements 13 and 14 on page 60.*

Quality Control Technology - Specialty Option

Associate in Technical Studies Degree Program: Code QCTP

Advisor: Les Pierce

The purpose of the Specialty Option is to allow students working in diverse fields of Quality Control to customize their own program specialty area.

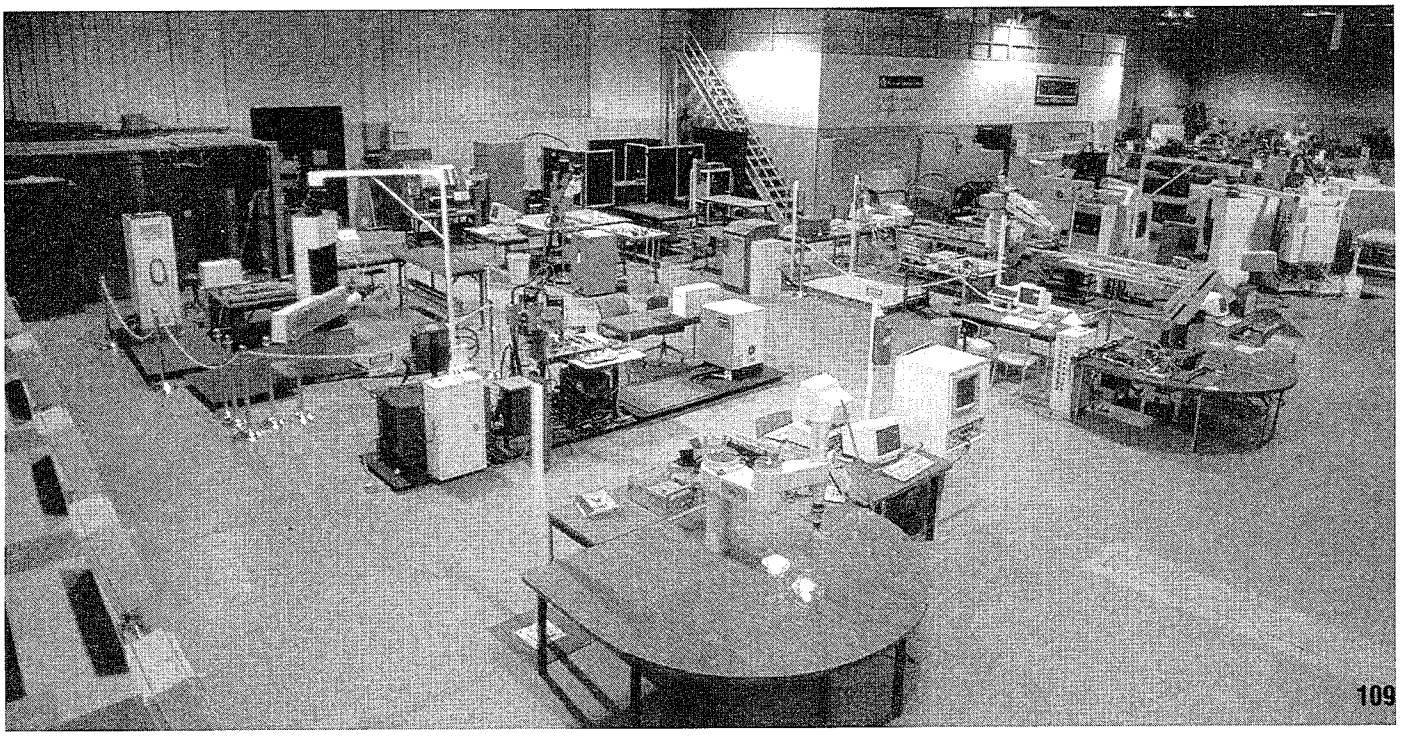
Program Admission Requirement:

- One year of high school algebra (Algebra I), or MTH 097, or equivalent placement test
- Permission of program advisor

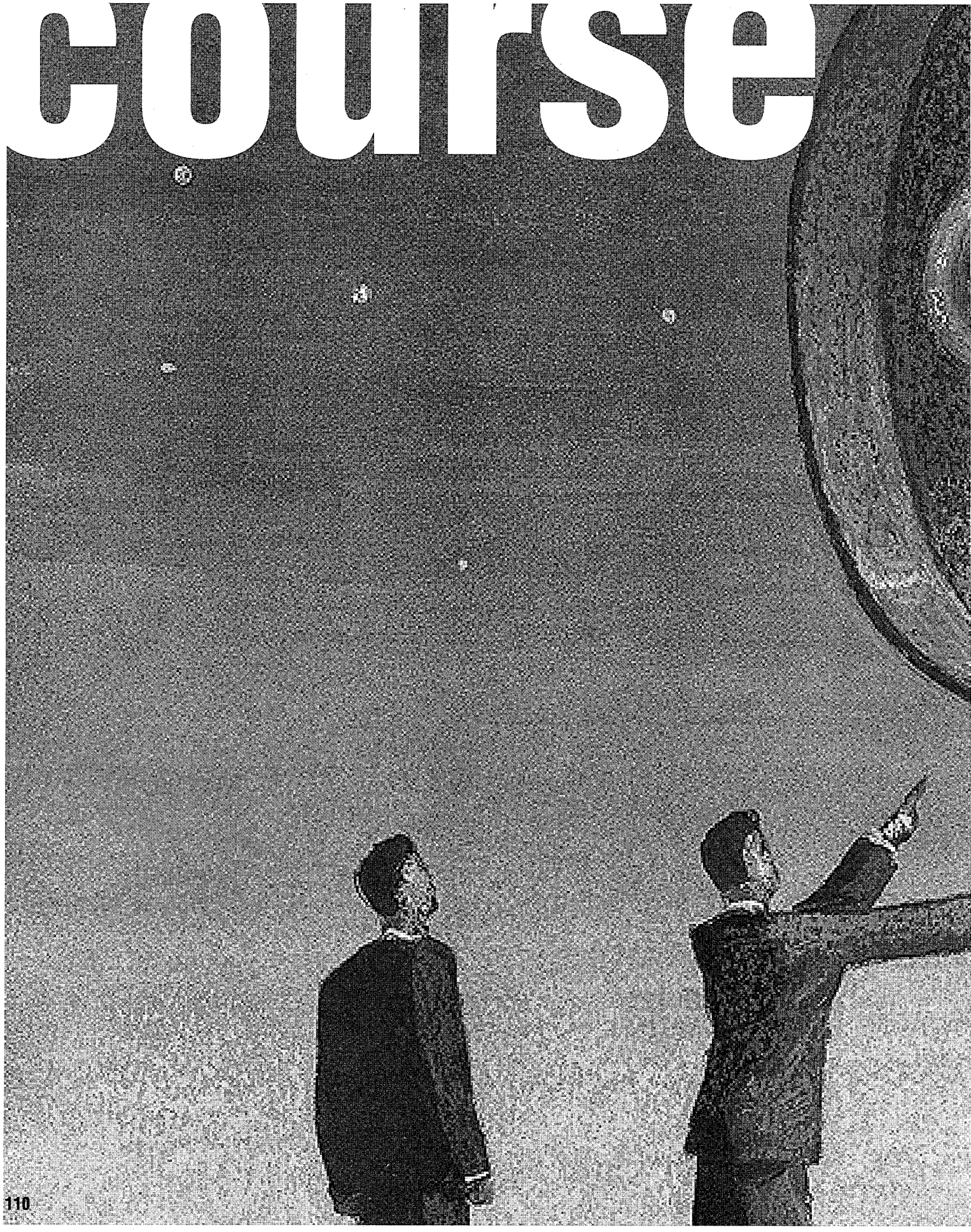
Course Number	Course Title	Credit Hours
CIS 100	Introduction to Computers (or CIS 110)	3-4
ENG	Restricted ENG Requirement (100 or 111)	4
MTH	Restricted Math Elective (169 or 179)	4
PLS 112	Introduction to American Government	3
SCI 100	Intro to Natural Sciences	1
HUM*	Restricted Humanities elective	1-3
Individual	Restricted individual electives (see program advisor)	27
QCT 101	Process Quality Control	3
QCT 122	Sampling Quality Control	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

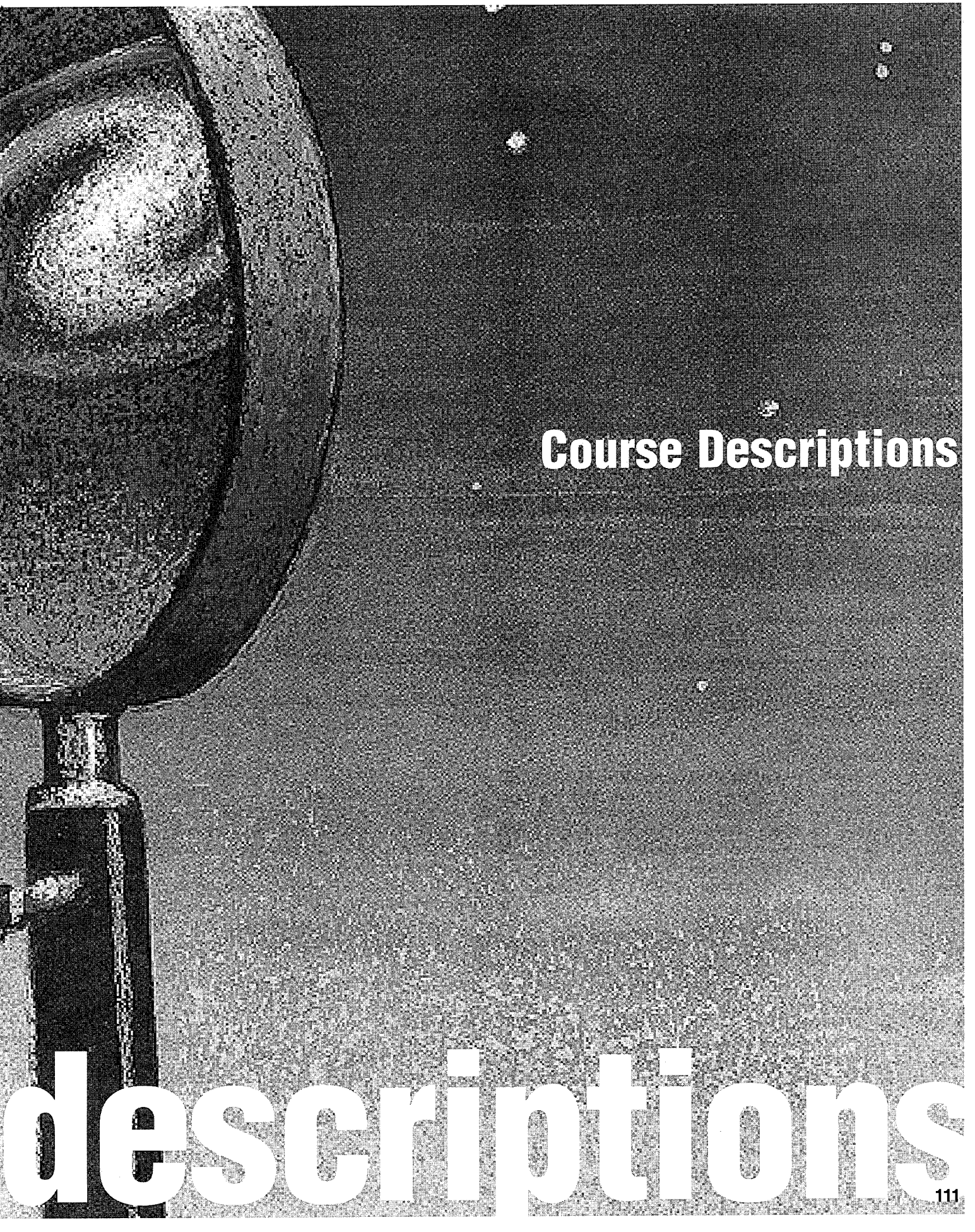
Total credit hours for program: 61-64

** Choose from list of Humanities courses that meet elements 13 and 14 on page 60.*



course





Course Descriptions

descriptions

Course Descriptions

Descriptions of all credit courses offered at Washtenaw Community College follow. These descriptions include the Course number, title and credit hours. Also included are the prerequisites and corequisites for the courses and the total number of hours each course meets.

As of Fall '93, students entering into a new program of study must meet the 24 elements of WCC's core curriculum. The elements covered in each course are also listed, by number, in the following descriptions. For a full explanation of the core curriculum, see pages 59-60 of the core curriculum section of this Catalog.

Co-op Courses

Co-op Education courses available in most career programs are Co-op Education I (number 174) and Co-op Education II (number 274). Co-op courses provide the student 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 classroom 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 a cooperative education course requires attendance at a Co-op Orientation and a faculty signature. Please contact a faculty member in your area of interest or the Workplace Learning Center for further information about Co-op courses.

Academic Skills (ACS)

ACS 000. ACS Computer Lab .....0 credit hours

The ACS Computer Lab (LA 111) is available to help improve students' reading and learning skills. Students enrolled in ACS 040, 041, 045, 046, 070, 071, 108, or 109 also must enroll in a lab section of their choice where they will receive an additional hour of reading instruction. Students not enrolled in Academic Skills classes may be referred for individual consultation. The developmental reading courses 040, 041, 045, 046, 070, and 071 offer breakout courses. Enrollment in these breakout courses (040A, 040B, 040C, etc.) can be implemented only by the Academic Skills instructor once a student's individual needs and progress are evaluated.

ACS 040. Vocabulary and Comprehension Skills I.....4 credit hours

Prerequisite: none
Corequisite: ACS 000
45 lecture - 15 lab hours
Fulfills core elements: None

This course is designed to lay the foundations for reading improvement skills. Emphasis is placed on building the student's primary vocabulary. Program placement is determined by a diagnostic reading test. The fourth hour of instruction is given in the lab each week. Students enrolled in this course must satisfactorily complete their work before enrolling in a higher level reading course. On the recommendation of the instructor, this course may be completed in three semesters as ACS 040A, 040B and 040C. Grading uses the satisfactory/unsatisfactory system.

ACS 041. ESL Vocabulary and Comprehension Skills I .....4 credit hours

Prerequisite: none
Corequisite: ACS 000
45 lecture - 15 lab hours
Fulfills core elements: none

This course is designed to lay the foundations for reading improvement needed by ESL students. Emphasis is placed on vocabulary development, active reading strategies, independent silent reading and comprehension. 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 ACS 040A, 040B and 040C.Grading uses the satisfactory/unsatisfactory system.

ACS 045. Vocabulary and Comprehension Skills II.....4 credit hours

Prerequisite: none
Corequisite: ACS 000
45 lecture - 15 lab hours
Fulfills core elements: None

This course is designed to develop reading comprehension through concentrated skill work. In addition, emphasis is placed on increasing the student's vocabulary. Program placement is determined by a diagnostic reading test. The fourth hour of instruction is given in the lab each week. Students enrolled in this course must satisfactorily complete their work before enrolling in a higher level reading course. On the recommendation of the instructor, this course may be completed in two semesters as ACS 045A and 045B. Grading uses the satisfactory/unsatisfactory system. (Students enrolled in ENG 050 are encouraged to take ACS 045 at the same time.)

ACS 046. ESL Vocabulary and Comprehension Skills II.....4 credit hours

Prerequisite: none
Corequisite: ACS 000
45 lecture - 15 lab 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. 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 two semesters as ACS 046A and 046B. Grading uses the satisfactory/unsatisfactory system.

ACS 070. Vocabulary and Comprehension Skills III .....4 credit hours

Prerequisite: none
Corequisite: ACS 000
45 lecture - 15 lab hours
Fulfills core elements: None

This course is designed to strengthen the student's reading skills and includes a college-level vocabulary program. In addition, students develop abstract reasoning skills (e.g., inferencing) in relation to reading content. Upon completion, students are prepared for enrollment in WCC training programs and academic courses. The fourth hour of instruction for this class is given in the lab each week. Grading is based on the standard grading scale.

ACS 071. ESL Vocabulary and Comprehension Skills III .....4 credit hours

Prerequisite: none
Corequisite: ACS 000
45 lecture - 15 lab hours
Fulfills core elements: None

ESL students receive instruction and practice in advanced reading comprehension strategies, spelling, vocabulary and basic study skills in preparation for enrollment in WCC training programs and academic courses. Program placement is determined by a diagnostic reading test. One additional hour of reading skill improvement is received in the ACS lab each week. On the recommendation of the instructor, this course may be completed in two sessions, as ACS 071A and ACS 071B. Grading is based on the standard scale

ACS 101. Student Success Seminar.....1 credit hour

Prerequisite: None
15 lecture hours (seminar)
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, notetaking, test taking, and time management). Career and academic goal-setting also are addressed.

ACS 102. Spelling Power .....2 credit hours

Prerequisite: none
30 lecture hours
Fulfills core elements: 7

This course will improve the student's spelling through programmed instruction in English phonics, modular textbook materials, and common prefixes, suffixes, and roots. Additional instruction is offered in dictionary skills. This is not a developmental course; students in need of basic spelling and vocabulary skills should elect ACS 040. Grading is based on the standard grading scale.

ACS 103. Study Skills.....3 credit hours

Prerequisite: none
45 lecture hours
Fulfills core elements: 1,2,7,8,9

This course is designed for students interested in improving 1) textbook reading, 2) listening and note taking, 3) study techniques, and 4) test taking. Additional topics include learning styles, time management, information resource use, writing and research process skills, presentation and group process skills, and long-term goal setting. It is recommended taht students be enrolled concurrently in an English, humanities, health, social or exact science so they can apply their newly learned study skills in another course.

ACS 104. Study Skills Short Course.....2 credit hours

Prerequisite: none
30 lecture hours
Fulfills core elements: 7, 9

This course is designed for students interested in improving study and note taking skills. Reading and note taking techniques appropriate to academic materials are stressed. It is essential that students electing this course be enrolled in an English, Humanities, Social or Exact Science course so they can apply their newly learned study skills.

ACS 105. Vocabulary and Spelling Power....3 credit hours

Prerequisite: none
45 lecture hours
Fulfills core elements: 7

In this course, students develop college-level vocabularies by learning common prefixes, suffixes, and roots. They also improve their spelling through programmed instruction in English phonics. Additional instruction is offered in dictionary skills and determining meaning from context. This is not a developmental course; students in need of basic spelling and vocabulary skills should elect ACS 040.

ACS 106. Speed Reading .....2 credit hours

Prerequisite: none
30 lecture hours
Fulfills core elements: None

This course is designed for students interested in becoming more flexible readers. Students learn techniques to vary reading speeds and techniques appropriate to their material and purposes.

ACS 107. Speed Reading .....3 credit hours

Prerequisite: none
45 lecture hours
Fulfills core elements: None

This course is designed for competent students interested in becoming faster and more flexible readers. Students learn techniques to vary reading speeds appropriate to their material and purposes. Class meets for a full semester, allowing time for students to master each successive reading technique before learning a new one.

ACS 108. Problem Analysis and Critical Thinking Skills .....4 credit hours

Prerequisite: none
Corequisite: ACS 000
45 lecture - 15 lab hours
Fulfills core elements: 7,9,10

This is a course for students who wish to insure that their reading comprehension and vocabulary levels are commensurate with college text material. It is recommended for students who have completed ACS 070 who have not tested at the exit reading level and need further instruction in comprehension techniques and vocabulary development.

ACS 109. ESL Advanced Vocabulary.....4 credit hours

Prerequisite: none
Corequisite: ACS 000
45 lecture - 15 lab hours
Fulfills core elements: none

This vocabulary improvement course is designed for advanced learners of English as a second language. Major areas of emphasis include the study of word derivations, context clues, idiomatic English, dictionary skills, and vocabulary acquisition strategies. One hour of instruction is given in the ACS Computer Lab each week.

ACS 179. Family Literacy.....3 credit hours

Prerequisite: None
45 lecture hours
Fulfills core elements: 7,8

This course is designed to help adults work effectively with young children in developing preliteracy and literacy skills. The student explores the benefits for children of shared book experiences with family members of all ages.

Accounting (ACC)

ACC 091. Fundamentals of Accounting I .....3 credit hours
Prerequisite or Corequisite: MTH 090
45 lecture 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. Does not give transfer college credit.

ACC 092. Fundamentals of Accounting II ....3 credit hours
Prerequisite: ACC 091
45 lecture hours
Fulfills core elements: 5,7

A continuation of ACC 091, 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. Does not give transfer college credit.

ACC 111. Principles of Accounting.....3 credit hours
Prerequisite or Corequisite: MTH 163, MTH 181 or higher
45 lecture 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.....3 credit hours
Prerequisite: ACC 111
45 lecture hours
Fulfills core elements: 4,5,7,9

A continuation of Principles of Accounting 111 covering partnerships, corporations, and an introduction to cost accounting and analysis of financial reports.

ACC 131. Computerized Accounting.....3 credit hours
Prerequisite: ACC 092 or ACC 111
45 lecture 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 is intended to train students to become intelligent users of accounting software on the microcomputer.

ACC 174. ACC Co-op I.....1-3 credit hours
Prerequisite: Consent
Fulfills core elements: None

See the description for all co-op courses at the beginning of these course descriptions.

ACC 179. Family Literacy.....3 credit hours
Prerequisite: none
Fulfills core elements: 7,8

This course is designed to help adults work effectively with young children in developing preliteracy and literacy skills. The student explores the benefits for children of shared book experiences with family members of all ages.

ACC 200. Tax Preparation: Personal and Small Business.....3 credit hours
Prerequisite: None
45 lecture hours
Fulfills core elements: 2,5,7,9

This is an introductory course in federal and state personal income taxes, federal and state payroll taxes, and other general taxes. The course covers tax returns for individuals and unincorporated (Schedule C sole proprietorship) businesses.

ACC 213. Intermediate Accounting.....3 credit hours
Prerequisite: ACC 122 and 131
45 lecture hours
Fulfills core elements: 4,5,7,8,9

Further study of generally accepted accounting principles is provided as they apply to financial statements, cash, and temporary investments, receivables, merchandise, plant assets, current liabilities, fixed assets, long-term investments, capital and earnings. This course is required of all Accounting majors and is offered in the Fall Semester only.

ACC 225. Managerial Cost Accounting .....3 credit hours
Prerequisite: ACC 122 and 131
45 lecture 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, activity based costing and process accounting.

ACC 274. ACC Co-op II.....1-3 credit hours
Prerequisite: ACC 174
Fulfills core elements: None

See the description for all co-op courses at the beginning of these course descriptions.

Anthropology (ANT)

ANT 201. Introduction to Cultural Anthropology .....3 credit hours
Prerequisite: None
45 lecture 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. This course is also taught as a television course using the program series "Faces of Culture."

ANT 202. Introduction to Physical Anthropology .....3 credit hours

Prerequisite: None
45 lecture 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 100. Specifications .....1 credit hour

Prerequisite: ARC 117
15 lecture 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 credit hours

Prerequisite: None
15 lecture - 30 lab 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 credit hours

Prerequisite: None
45 lecture - 90 lab 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 credit hours

Prerequisite: None
45 lecture 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 and Electrical Systems for Buildings .....3 credit hours

Prerequisite: None
30 lecture - 30 lab 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 credit hours

Prerequisite: ARC 111
45 lecture - 90 lab 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.

ARC 150. Presentation Drawings and Models.....4 credit hours

Prerequisite: None
30 lecture - 60 lab 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 210. Structure in Architecture.....2 credit hours

Prerequisite: PHY 105 or 111
30 lecture 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 credit hours

Prerequisite: ARC 122
30 lecture - 105 lab hours
Fulfills core elements: 7,8

Major problems in architectural detailing are studied through the preparation of drawings and details for a moderate sized building such as a school or church. The option to use a computer for drafting tasks is provided, with instructor consent. Choice of software features AutoCAD AEC, Data CAD, and Micro Station PC.

ARC 219. Architectural Engineering and Construction CAD.....3 credit hours

Prerequisite: None
45 lecture 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. Softwares featured include base packages and 3R party applications as available. Features microstation, AutoCAD or DataCAD or a combination of the several.

ARC 224. Architectural Drawing IV .....6 credit hours

Prerequisite: ARC 213
30 lecture - 105 lab 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, Data CAD, and Micro Station PC.

ARC 227. Estimating Construction Costs.....3 credit hours

Prerequisite: ARC 117 and 120
45 lecture 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 II.....1-3 credit hours
Prerequisite: ARC 174, Consent
Fulfills core elements: None
See the description for all co-op courses at the beginning of these course descriptions.

Art (ART)

ART 101. Drawing and Painting .....3 credit hours
Prerequisite: None
15 lecture - 30 lab 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 credit hours
Prerequisite: None
45 lecture - 45 lab 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 credit hours
Prerequisite: None
15 lecture - 75 lab hours
Fulfills core elements: 7,8,9,13
This class is an introduction to the central problems and issues of freehand drawing. This course emphasizes accurate representational drawing through a series of projects concentrating on simple objects. It is recommended for students who are planning to continue at WCC or to transfer into other art programs.

ART 112. Basic Design I .....4 credit hours
Prerequisite: None
60 lecture - 30 lab 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 t hat can be appled to all areas of the visual arts. This course is recommended for students who are planning to continue at WCC or to transfer to other art programs.

ART 114. Painting.....4 credit hours
Prerequisite: None
90 lab hours
Fulfills core elements: 7,9,13
The necessary skills of controlling the application of colored pigments to achieve a unified two dimensional surface are developed. Emphasis is on development of sustaining attitudes toward painting regardless of subject matter or style.

ART 120. Portrait Painting and Life Drawing.....4 credit hours
Prerequisite: None
90 lab 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 credit hours
Prerequisite: ART 111
90 lab 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 124. Imaginative Drawing I.....2 credit hours
Prerequisite: None
30 lab hours
Fulfills core elements: 13
This course is devoted to imaginative drawing, both abstract and representational. The aim is to help students to develop and to refine imaginative ideas and to improve the graphic quality of their work.

ART 125. Painting II .....4 credit hours
Prerequisite: ART 114
90 lab hours
Fulfills core elements: 7,9,13
A continuation of ART 114, with emphasis on individual development.

ART 126. Imaginative Drawing II.....2 credit hours
Prerequisite: ART 124 or consent
30 lab hours
Fulfills core elements: 13
This course is devoted to imaginative drawing, both abstract and representational. Students develop and refine imaginative ideas and improve the graphic quality of their work. This course continues the objectives of ART 124.

ART 130. Art Appreciation.....3 credit hours
Prerequisite: None
45 lecture 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 credit hours
Prerequisite: None
90 lab 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 credit hours

Prerequisite: None
45 lecture 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. Multimedia methods, skill development and aesthetic competence are emphasized.

ART 150. Monuments from Around the World .....3 credit hours

Prerequisite: None
45 lecture 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 hour

Prerequisite: None
15 lecture 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 credit hours

Prerequisite: None
60 lecture hours
Fulfills core elements: 7,10,15,17

A survey is provided 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)

Students enrolling in the Auto Body Repair Program are required to furnish basic tool sets. They also are required during their training to add to the tool sets so they are equipped upon completion of their programs.

ABR 111. Auto Body Repair Fundamentals .....4 credit hours

Prerequisite: None
15 lecture - 105 lab hours
Fulfills core elements: 7,9,18,19

This course involves repairing damaged body panels and studying the working properties of automobile sheet metal and basic damage conditions, analyzing typical damage conditions and establishing accepted repair procedures.

ABR 112. Auto Refinishing Fundamentals....4 credit hours

Prerequisite: None
30 lecture - 90 lab hours
Fulfills core elements: 7,9,18

Methods and procedures used with automobile refinishing materials are covered in this course. Also included are: acrylic lacquers and enamels used to spray paint automobile body panels and complete automobiles; proper use of refinishing materials and the development of basic skills and procedures used in the trade.

ABR 113. Auto Body Service Fundamentals .....2 credit hours

Prerequisite: None
15 lecture - 45 lab hours
Fulfills core elements: 7,9,18,19

This course is an introduction to the principles of alignment and servicing of bolted on, riveted, screwed on, or adhesive bonded panels or components of automobile and light truck bodies.

ABR 114. Applied Auto Body Welding .....1 credit hour

Prerequisite: None
7.5 lecture - 22.5 lab hours
Fulfills core elements: 7,9,18,19

This class is a demonstration-lab course developing basic welding skills used in auto body repair. Types of welded joints used to repair or replace damaged panels are taught with special emphasis on joint construction and heat control.

ABR 123. Body Repair Applications .....4 credit hours

Prerequisite: ABR 111
120 lab hours
Fulfills core elements: 7,9,18,19

This is a continuation of Auto Body Repair 111. Lab work includes actual repair jobs to develop all of the basic bumping skills. Emphasis is placed on quality and work habits.

ABR 124. Auto Refinishing Applications.....4 credit hours

Prerequisite: ABR 112
15 lecture - 105 lab hours
Fulfills core elements: 7,9,18

This is a continuation of units in Auto Refinishing 112. Lab assignments on actual automobiles provide an opportunity to improve skills, match high metallic colors using modern spot repair and color blending techniques, as well as overall refinishing.

ABR 125. Flat Rate Estimating .....2 credit hours

Prerequisite: None
22.5 lecture - 22.5 lab hours
Fulfills core elements: 1,4,5,7,9,11

The course involves the use of flat-rate manuals to determine parts and labor prices in estimating damaged automobiles. Emphasis is on procedures used to establish complete and accurate prices in preparing the estimate.

ABR 126. Fundamentals of Frame and Body Alignment .....2 credit hours

Prerequisite: None
30 lecture - 30 lab 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 127. Major Repair Fundamentals .....2 credit hours

Prerequisite: None
60 lab hours
Fulfills core elements: 7,9,18,19

This course teaches the use of hydraulic jacking equipment to repair sheet metal damage. Lab work includes set up of typical push or pull operations and straightening procedures used on major collision damages.

ABR 130. Custom Painting .....3 credit hours

Prerequisite: ABR 112
15 lecture - 45 lab 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, appliques, and etching are also covered.

ABR 131. Advanced Custom Painting .....2 credit hours

Prerequisite: ABR 130
15 lecture - 45 lab hours
Fulfills core elements: 7,9

This class is a continuation of methods and procedures used in automotive custom painting. Lab assignments on actual automobiles provide an opportunity to improve skills in pin striping, color design coordination, lettering on automobiles, mural development, and the use of specific effect color and related materials.

ABR 134. Auto Graphics .....2 credit hours

Prerequisite: ABR 112 and 130
15 lecture - 45 lab 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 I.....1-3 credit hours

Prerequisite: ABR 111,ABR 112, ABR 1113, Consent
Fulfills core elements: None

See the description for all co-op courses a the beginning of these course descriptions.

ABR 219. Major Repair Procedures.....4 credit hours

Prerequisite: ABR 123
15 lecture - 105 lab hours
Fulfills core elements: 7,9,18,19

This course provides a detailed study of the automobile body that includes use of hydraulic jacks and accessories to make repairs common to the front, side and rear sections of automobiles damaged by collision. Repair jobs are included to provide diversified experience on body trim and hardware, replacement and alignment of various body components

ABR 220. Enamel Refinishing Practices.....4 credit hours

Prerequisite: ABR 112 and 124
120 lab hours
Fulfills core elements: None

This class is a study of modern acrylic and polyurethane enamels which includes surface preparation, mixing and application of solid and metallic colors. Actual cars and light trucks provide the student diversified experience and skill development.

ABR 226. Unibody Structural Alignment .....2 credit hours

Prerequisite: None
30 lecture - 30 lab hours
Fulfills core elements: 7,8,9,18

This course offers training for the repair of structurally damaged unibody automobiles and light trucks. Included are a detailed study of body construction, diagnostic procedures, repair techniques and structural parts replacement using both conventional gauging and universal measuring equipment.

ABR 230. Specialized Study.....4 credit hours

Prerequisite: ABR 111 and 112
30 lecture - 90 lab hours
Fulfills core elements: 7,8,9

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

ABR 274. ABR Co-op I I.....1-3 credit hours

Prerequisite: ABR 174, consent
Fulfills core elements: None

See the description for all co-op courses at the beginning of these course descriptions.

Automotive Service (ASV)

Students enrolling in automotive service programs are required to furnish basic tool sets. They are also required to add to the tool sets during their period of training so they are equipped for employment upon completion of their program.

ASV 097. Automotive Service Fundamentals....2 credit hours

Prerequisite: None
15 lecture - 45 lab hours
Fulfills core elements: None

This Automotive Technology course is designed for the non-professional. The course explains the basic theory and inspection techniques that are helpful when buying or maintaining a car. Students are encouraged to inspect their vehicles, identify problems and make good decisions about what repairs they can perform. Consumer rights are discussed and good communication techniques with the repair facilities are presented. This course is designed and tailored to accommodate the needs of the beginning and experienced automobile owner. Some of the systems covered are: lubrication, heating and cooling, suspension and steering, brake systems, fuel systems and drivetrains.

ASV 110. Automotive Technology.....2 credit hours

Prerequisite: None
30 lecture hours
Fulfills core elements: None

This course introduces students to the major systems of the automobile. It also covers how these systems work together to enable the automobile to perform. In addition to helping students take care of their vehicles, it helps them discuss their automobiles more knowledgeably when problems occur. This course is not intended for the training of Automotive Technicians. It is meant to make individuals aware of the technology and design that goes into the vehicle. This course will be taught on the Internet.

ASV 111. Cylinder Head Service .....2 credit hours

Prerequisite: None
30 lecture - 30 lab hours
Fulfills core elements: 7,9,18

Students develop skills and understanding of the automobile engine and related service procedures for the most common engine service complaints. Using text, tools, manuals and automobiles in a laboratory setting, students perform service on the upper half of the modern automobile engine. This is the first half of a complete engine repair sequence. Students are encouraged to take this course early in their schooling but must have, or be developing, the skills offered in ASV 097, to expect success.

ASV 113. Manual Transmissions and Drivetrains .....2 credit hours

Prerequisite: None
15 lecture - 45 lab hours
Fulfills core elements: 5,7,9,18,19

This is an introductory course to 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 live vehicles is stressed.

ASV 116. Automotive Electronics.....2 credit hours

Prerequisite: None
30 lecture - 30 lab hours
Fulfills core elements: 4,5,9,18,19

Students are introduced to basic electricity theory and practice. Using auto-motive components and laboratory exercises, students progress from the theory of Ohms Law and component function, total diagnosis, service and/or repair of battery, charging system and cranking circuits. Electricity is a vital component in almost every phase of auto service. It is recommended that this course be one of the first courses taken to build a strong foundation for advanced automotive courses.

ASV 118. Fuel Systems.....2 credit hours

Prerequisite: None
22.5 lecture - 37.5 lab hours
Fulfills core elements: 7,18,19

Students experience demonstrations, laboratory exercises and discussion designed to develop an understanding of basic fuel system operation and factors affecting its performance. Objectives are designed to build a strong understanding of carburetion, emission controls, fuel injection theory and their components. Emission systems are introduced and basic service procedures are practiced. The knowledge obtained in PHY 110 Applied Physics, provides an excellent base of theory for successful completion of this course.

ASV 120 Engine Performance .....1 credit hour

Prerequisite: Michigan Certification in Engine Performance
16 lecture hours
Fulfills core elements: None

This course is for Michigan Certified Mechanics in the engine performance area. To maintain their certification, recertification is granted if class is passed.

ASV 124. Wheel Balance and Alignment .....2 credit hours

Prerequisite: None
15 lecture - 45 lab hours
Fulfills core elements: 7,9,18,19

Students learn the basic 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 the first course in a two course suspension sequence. To repair and align vehicles, both courses must be completed.

ASV 125. Brake Systems.....2 credit hours

Prerequisite: None
15 lecture - 45 lab hours
Fulfills core elements: 5,7,9,18,19

Students are guided through each component of the brake system. Text, tools, manuals, and live automobiles are used to teach the theory of brakes and function of components. Students are prepared to perform comprehensive brake service required in later classes. This is the introductory automotive brakes class and must be followed by the second in the sequence. Completion of the first semester auto service courses are recommended to get full benefits of the course.

ASV 126. Electrical Systems.....2 credit hours
Prerequisite: ASV 116
15 lecture - 45 lab hours
Fulfills core elements: 7,9,18,19
Building on the skills developed in ASV 116, students explore electronic and computerized ignition, starting systems and charging systems. This is the middle class in a three course sequence designed for in-depth understanding and skill development. It is strongly recommended that the first semester classes be completed prior to enrolling in this class.

ASV 128. Fuel Injection.....2 credit hours
Prerequisite: ASV 118
15 lecture - 45 lab hours
Fulfills core elements: 7,9,18,19
Students build on the concepts of carburetor and emission controls. Instruction centers on electronic fuel injection systems, computer controlled systems, final testing and service of them. This is the second course in the fuel sequence. Students are encouraged to enroll in this class immediately following ASV 118. Involvement in Automotive Electronics will enhance learning in this course.

ASV 129. Diagnosis and Repair I.....4 credit hours
Prerequisite: ASV 111, 113, 116, 118
120 lab hours
Fulfills core elements: 7,9,18,19
This course is designed to provide students with the basic diagnosis and repair skills necessary to properly service late model automobiles. Specialized areas of instruction include engines, electrical systems, fuel systems and drive trains. Cooling, lubrication and exhaust system service are also included.

ASV 160. Small Engine Repair.....2 credit hours
Prerequisite: None
15 lecture - 45 lab hours
Fulfills core elements: 7,9,15,18
This course covers the complete teardown and assembly of a small air cooled engine. It covers in detail the theory and operation of Briggs & Stratton, Tecumseh, and Kohler engines which constitute about 80% of the lawn mowers, garden tractors, tillers, mini-bikes, etc. in the area.

ASV 161. Small Engine Diagnosis and Repair I.....2 credit hours
Prerequisite: ASV 160
15 lecture - 45 lab hours
Fulfills core elements: 5,7,9,18
This course is a continuation of ASV 160 Small Engine Repair. Students perform in-depth diagnosis and repair of small gasoline engine units. In addition, units in electrical troubleshooting, advanced test equipment and driveline components are studied.

ASV 162. Small Engine Diagnosis and Repair II.....2 credit hours
Prerequisite: ASV 161
15 lecture - 45 lab hours
Fulfills core elements: 7,9,18
This is an advanced course in small engine service. Laboratory work is stressed and based on concepts and skills learned in ASV 160 and 161. Work on live units is stressed.

ASV 174. ASV Co-op I.....1-3 credit hours
Prerequisite: ASV 111, 113, 116, 118, 124,125, and consent
Fulfills core elements: None
See the description for all co-op courses at the beginning of these course descriptions.

ASV 212. Automatic Transmissions - Mechanical.....2 credit hours
Prerequisite: ASV 113
30 lecture - 30 lab hours
Fulfills core elements: 5,7,9,18,19
Complete live automatic transmission overhaul is featured in this course. Principles of operation and diagnosis are also included. The development of high standards of workmanship is given special emphasis.

ASV 214. Steering and Suspension Systems.....2 credit hours
Prerequisite: ASV 124
15 lecture - 45 lab hours
Fulfills core elements: 9,19
This is an advanced course involving diagnosis and service procedures of front and rear wheel drive suspension and steering systems. Emphasis is on proper removal and replacement of components. It is essential that students have all required hand tools and have successfully completed ASV 124, or have previous alignment experience.

ASV 215. Brake System Service.....1 credit hour
Prerequisite: ASV 125
15 lecture - 15 lab hours
Fulfills core elements: None
Using live cars where possible, students develop skills in repairing brake systems. Concentration is on factory technique and accepted field practice. Instruction includes drum, rotor, hydraulic system and mechanical system inspection and service.

ASV 216. Electrical Circuits.....2 credit hours
Prerequisite: ASV 126
15 lecture - 45 lab hours
Fulfills core elements: 7,9,18,19
This class involves the theory and application of automotive electronic circuits and accessories. It includes construction and servicing lighting systems, gauges, warning devices, windshield wipers and solid state devices.

ASV 218. Engine Performance Diagnosis ....2 credit hours
Prerequisite: ASV 111, 126, 128
15 lecture - 45 lab hours
Fulfills core elements: 18,19
This course is designed to incorporate the basic skills learned in ASV 111, 116, 121, 126, and 128, into a working diagnostic and repair sequence. Extensive use is made of live vehicles to enable students to learn in as close to a real situation as possible.

ASV 222. Automatic Transmission-Hydraulic Systems.....2 credit hours
Prerequisite: ASV 212
30 lecture - 30 lab hours
Fulfills core elements: 5,7,9
An application of hydraulic fundamentals to automatic transmission operation is provided in this class. Diagnosis of transmission problems is featured, with emphasis on understanding basic transmission functions.

ASV 227. Heating and Air Conditioning.....2 credit hours

Prerequisite: None
30 lecture - 30 lab hours
Fulfills core elements: 7,9,18,19

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 diagnostic techniques. Compressor service and distribution systems are studied. Laboratory experience is given; testing and servicing a variety of systems and problems.

ASV 228. Driveability.....2 credit hours

Prerequisite: ASV 218
15 lecture - 45 lab hours
Fulfills core elements: 9

This course is designed to utilize the diagnostic and repair skills learned in ASV 218 on later model vehicles that have computerized controlled ignition, fuel and emission control systems. Additional diagnostic and repair sequences of the computerized systems are introduced.

ASV 234. Steering and Suspension System Service.....1 credit hour

Prerequisite: ASV 124, ASV 214
Fulfills core elements: None
7.5 lecture - 22.5 lab hours

Using live vehicles, students develop skills in diagnosing and repairing steering and suspension systems. Concentration is on factory techniques and accepted field practice. Instruction includes diagnosis and repair of struts, springs, ball joints, suspension bushings, tie rods, rack and pinion, and other steering and suspension components.

ASV 239. Customer Service .....3 credit hours

Prerequisite: None
45 lecture hours
Fulfills core elements: 2,7,9

Students enhance their interpersonal skills through the techniques gained in this course. Developing insight using demonstrations, video tape, role playing, and interaction, students are guided through a curriculum which builds a value-added attitude for customer service personnel. Skills learned include controlling one's emotions in difficult situations and increasing customer satisfaction. Career options in the auto service area are explored and a career plan developed. Professional ethics, resume preparation, interviewing skills, salary negotiations and job success are explored.

ASV 274. ASV Co-op II .....1-3 credit hours

Prerequisite: ASV 174 and consent
Fulfills core elements: None

See the description for all co-op courses at the beginning of these course descriptions.

Biology (BIO)

BIO 101. Concepts of Biology.....4 credit hours

Prerequisite: None
Corequisite: BIO 101L
45 lecture - 45 lab 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 credit hours

Prerequisite: None
Corequisite: BIO 102L
45 lecture - 45 lab 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 credit hours

Prerequisite: BIO 101, CEM 111 or Consent
Corequisite: BIO 103L
45 lecture - 45 lab 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.

BIO 107. Introduction to Field Biology.....3 credit hours

Prerequisite: None
45 lecture 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 are covered. An outdoor journal and similiar activities are stressed.

BIO 111. Anatomy and Physiology .....5 credit hours

Prerequisite: High School Chemistry or CEM 057
60 lecture - 45 lab 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 137. Ornamental Indoor Plants.....2 credit hours

Prerequisite: None
30 lecture hours
Fulfills core elements: None

This course is designed for people who enjoy house plants and want to learn more about them. Selection and growth of ornamental indoor plants from seeds and cuttings highlight the course. Students should be able to increase their collection of house plants by at least fifteen varieties. Proper care of house plants is stressed, relating to soil, potting, transplanting, watering, fertilizers, insects, control of growth and flowering.

BIO 147. Hospital Microbiology.....1 credit hour

Prerequisite: None
15 lecture 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 200. Current Topics in Biology .....3 credit hours

Prerequisite: None
45 lecture hours
Fulfills core elements: 7,15,16,17,18

This class is an examination from a biological point of view of the state of current knowledge in various fields of biology. It includes the state of current studies and the extent of our knowledge in the controversial fields of human genetic engineering; the biology of human behavior, human cycles, learning, sleep and cancer. Relationship of such knowledge to future technology and possible social and political implications also are discussed.

BIO 208. Genetics .....4 credit hours

Prerequisite: BIO 101 and CEM 111
45 lecture - 45 lab 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.

BIO 215. Introduction to Cell Physiology .....3 credit hours

Prerequisite: CEM 111, BIO 101 or Consent
Corequisite: BIO 216
45 lecture hours
Fulfills core elements: 7,8,9,10

Introduction to the chemistry and physiology of living cells, including cell metabolism, 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.

BIO 216. Cell Physiology Lab.....1 credit hour

Corequisite: BIO 215
45 lab hours
Fulfills core elements: 6,7,8,9,15,18,19

This is a lab course designed to be taken concurrently with BIO 215, Introduction to Cell Physiology.

BIO 220. Human Genetics .....3 credit hours

Prerequisite: BIO 101 or consent
45 lecture 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. Zoology .....4 credit hours

Prerequisite: BIO 101 or consent
Corequisite: BIO 227L
45 lecture - 45 lab hours
Fulfills core elements: 7,9,10,15,17

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.

BIO 228. Botany .....4 credit hours

Prerequisite: BIO 101 or consent
Corequisite: BIO 228L
45 lecture - 45 lab 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.

BIO 237. Microbiology .....4 credit hours

Prerequisite: BIO 101 or consent
Corequisite: BIO 237L
45 lecture - 45 lab 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.

BIO 249. Field Study of Birds.....1 credit hour

Prerequisite: None
15 lecture hours
Fulfills core elements: 7

This class involves identification of birds, their songs and nesting habits.

BIO 258. Field Study of Trees and Shrubs.....1 credit hour

Prerequisite: None
15 lab hours
Fulfills core elements: 7,17

Trees, shrubs and vines are studied and identified in this field 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 hour

Prerequisite: None
15 lecture hours
Fulfills core elements: 7,17

Non-woody higher plants are studied with emphasis on identification.

BIO 267. Winter Field Study .....1 credit hour

Prerequisite: None
15 lab 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 hour
Prerequisite: None
15 lecture 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 101. Business Career Opportunities ....3 credit hours
Prerequisite: None
45 lecture hours
Fulfills core elements: 7

In this course, students become familiar with work opportunities in business and industry and the skills that students must acquire in order to succeed in the field of their choice. Students learn how to investigate recent employment trends, both individually and as part of a team, in order to develop a habit of continual career training. Learning resources include speakers from local business, industry, and governmental agencies. Students complete a personal plan of study designed to qualify them for work in the business field of their choice.

BMG 109. Introduction to Home/Small Business Management .....3 credit hours
Prerequisite: None
45 lecture hours
Fulfills core elements: 7

This course introduces the learner to the knowledge, skill, and attitude necessary to start, operate, and manage a home-based small business in a rural, suburban, or urban metropolitan area. By text, video, and case study assignments, students cover such topics as the nature of small business, entrepreneurial opportunities, developing the business plan, marketing, managing operations, financial management, and social and legal issues. Participants explore the resources of the Washtenaw Small Business Development Center (SBDC), including accessing the Internet. This course may be taken as a telecourse using the program series "Something Ventured."

BMG 110. Credit Management .....3 credit hours
Prerequisite: None
45 lecture 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 credit hours
Prerequisite: None
45 lecture 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 and trusts and negotiable instruments.

BMG 122. Business Law II.....3 credit hours
Prerequisite: BMG 111
45 lecture hours
Fulfills core elements: 1,7,8,9,10,11,22,23

Text and case study of agency relationships, formation and operation of partnerships, formation and operation of corporations, security laws, sales agreements, debt relationships, and current computer law.

BMG 130. Investment Strategies.....3 credit hours
Prerequisite: None
45 lecture 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 will learn to read The Wall Street Journal and utilize the information to evaluate investments.

BMG 140. Introduction to Business .....3 credit hours
Prerequisite: None
45 lecture 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. Develops 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. This course is also taught as a television course using the program series "It's Strictly Business."

BMG 150. Labor Management Relations .....3 credit hours
Prerequisite: None
45 lecture 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 160. Principles of Sales.....3 credit hours
Prerequisite: BMG 140
45 lecture hours
Fulfills core elements: 1,7,9

This class studies the principles and concepts of the sales function. Its primary purpose is to help students plan and deliver sales presentations. Areas of analysis are consumer buying motives, effective communication, handling objections, presenting demonstrations and closing a sale.

BMG 170. Introduction to International Business.....3 credit hours

Prerequisite: none
45 lecture hours
Fulfills core elements: 7, 24

This course surveys the principles and practices important in doing business with foreign customers from a U.S. home base and in conducting business abroad on foreign soil. The course focuses on opportunities for global business, export-import trading, culturally different business practices, foreign exchange, theories of free trade and protectionism, government assistance to international commerce, and elements of world geography.

BMG 174. BMG Co-op I .....1-3 credit hours

Prerequisite: consent
Fulfills core elements: None

See the description for all co-op courses at the beginning of these course descriptions.

BMG 200. Human Relations in Business.....3 credit hours

Prerequisite: None
45 lecture 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 credit hours

Prerequisite: None
45 lecture 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 prepare reports, routine correspondence, resumes, and formal business presentations.

BMG 208. Principles of Management.....3 credit hours

Prerequisite: None
45 lecture 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. This course is also taught as a television course using the program series "The Business of Management."

BMG 209. Home/Small Business Planning.....2 credit hours

Prerequisite or Corequisite: BMG 109
30 lecture hours
Fulfills core elements: 1,7,8,9, 1

This course enables students to apply and build upon the knowledge and skills acquired in BMG 109: Introduction to Small Business Management. Each students has the opportunity to construct a Business Plan or Financing Proposal using actual case studies and proved Business Planning guide outlines. This course is for people interested in starting, owning or operating a small or home-based business or taking responsibility for creating innovations within a small company or corporate organization.

BMG 210. Money, Banking and Financial Institutions.....3 credit hours

Prerequisite: None
45 lecture 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 220. Principles of Finance .....3 credit hours

Prerequisite: ACC 092 or ACC 122
45 lecture 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 advanced studies in finance and practical application of financial principles.

BMG 230. Supervisory Management .....3 credit hours

Prerequisite: None
45 lecture hours
Fulfills core elements: 1,7,8,9

This class focuses on the application of the principles of management. Emphasis is on the managerial process, examining the functions of planning, organizing, staffing, directing, and controlling, and their relationship to the job of a supervisor. It helps potential or practicing supervisors gain a broader perspective of their role in the organizational structure, enabling them to contribute more effectively to the goals of the organization.

BMG 235. Women in Management.....3 credit hours

Prerequisite: None
45 lecture hours
Fulfills core elements: 1,2,7,9

This is a course designed to help women develop management skills that establish competence, to examine how self-concept affects management style, and to assist in effecting behavioral changes to more effectively function as a manager. Topics covered include: problem solving and decision-making, planning for results, effective communication, motivation and team building.

BMG 240. Human Resources Management ..3 credit hours

Prerequisites: BMG 140 and BMG 208
45 lecture 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.

BMG 242. Cultural Diversity in the Workplace .....½ credit hour

Prerequisite: None
7.5 lecture hours
Fulfills core elements: None

This course highlights cultural diversity in the workplace and the advantages of valuing it.

BMG 243. Negotiating in the Workplace.....½ credit hour

Prerequisite: None
7.5 lecture hours
Fulfills core elements: None

This course focuses on the fundamentals of negotiating that are involved in many work-related activities.

BMG 244. Self Management for Personal Productivity in the Workplace .....½ credit hour

Prerequisite: None
7.5 lecture hours
Fulfills core elements: None

This course 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.

BMG 250. Principles of Marketing .....3 credit hours

Prerequisite: None
45 lecture 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. This course also is taught as a telecourse using the series "Marketing."

BMG 255. Marketing and Management Career Development .....2 credit hours

Prerequisite: None
30 lecture hours
Fulfills core elements: 7

This course is designed to develop skills and understanding in careers of Marketing, Management and Merchandising using simulated and actual applications through Delta Epsilon Chi competitive events. Membership in Delta Epsilon Chi is required. This course may be elected twice. Offered Winter semester only.

BMG 270. Advertising Principles.....3 credit hours

Prerequisite: BMG 250
45 lecture hours
Fulfills core elements: 7,9,10,21

This is a managerial approach to the study of the basic principles and concepts which underlie advertising practice and procedure in the marketing-promotional and distribution aspects of modern business-industrial enterprise operations. It includes the role of advertising in the individual firm and the total economy; also advertising objectives, methods, techniques, preparation, research, surveys, copywriting, layout, media selection and testing advertising effectiveness, as well as advertising rates and budgetary factors.

BMG 272. Problem Solving .....½ credit hour

Prerequisite: None
7.5 lecture hours
Fulfills core elements: None

This course examines problem solving techniques and methods used in today's work place. Students will gain experience in using both critical and creative thinking approaches to problem solving in both individual and team settings

BMG 273. Understanding the Organization: a Systems Perspective.....½ credit hour

Prerequisite: None
7.5 lecture hours
Fulfills core elements: None

This course examines the various stakeholders of business and their relationship to each other, with special emphasis on the systemic balance that must be maintained among the competing needs of these parties for organizational resources. Students become familiar with basic functions of a company and how the activities performed as part of these functions contribute to the overall profitability and health of the organization as a whole.

BMG 274. BMG Co-op II .....1-3 credit hours

Prerequisite: Consent
Fulfills core elements: None

See the description for all co-op courses at the beginning of these course descriptions.

BMG 280. Business Etiquette .....½ credit hour

Prerequisite: None
7.5 lecture hours
Fulfills core elements: None

This course develops social skills necessary for a professional image and a positive work environment. Guidance is provided for introductions, appearance, business dining, gift-giving and other workplace etiquette.

BMG 281. Conflict Resolution in the Workplace.....½ credit hour

Prerequisite: None
7.5 lecture hours
Fulfills core elements: None

This 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.

BMG 282. Feedback: Criticism and Praise for Effective Performance.....½ credit hour

Prerequisite: None
7.5 lecture hours
Fulfills core elements: None

This course develops skills in providing critical feedback in the workplace. Focus is on how to give and handle praise and criticism of performance.

BMG 284. Effective Telephone Techniques.....½ credit hour

Prerequisite: None
7.5 lecture hours
Fulfills core elements: None

This course acquaints students with techniques and guidelines for making the telephone a powerful business tool. Topics include basic communication skills for the phone, courtesy and handling specific types of incoming and outbound business calls.

BMG 285. Meeting Management .....½ credit hour

Prerequisite: None
7.5 lecture hours
Fulfills core elements: None

This course builds skills in planning and facilitating productive meetings. Focus in on strategies for planning, conducting and evaluating meetings in the workplace.

BMG 286. Business Presentation Skills.....½ credit hour

Prerequisite: None
7.5 lecture hours
Fulfills core elements: None

This course develops basic skills and confidence in preparing and delivering business presentations. Emphasis is placed in planning, overcoming anxiety, developing delivery techniques, using visual aids and handling questions.

BMG 288. Listening Skills.....½ credit hour

Prerequisite: None
7.5 lecture hours
Fulfills core elements: None

This course builds basic listening skills in the workplace. Students learn to match appropriate listening styles to situations, to overcome barriers to listening and to practice techniques to improve listening behaviors.

BMG 289. Team Building .....½ credit hour

Prerequisite: None
7.5 lecture hours
Fulfills core elements: None

This course develops skills needed for effective team development. Topics include team leadership and interpersonal skills needed to facilitate development through the stages of the team building process.

BMG 290. Independent Directed Study .....2-8 credits

Prerequisite: Consent
Credit hours determined prior to registration
Fulfills core elements: None

This is a planned program of study in selected business-industrial occupational career subject matter under the guidance and direction of a WCC instructor. It supplements classroom study in a way that enhances the student's total occupational, career, and educational experience. Readings, analyses, conferences and reports are included.

Business Office Systems (BOS)

BOS 101. Keyboarding and Document Formatting I .....3 credit hours

Prerequisite: None
37.5 lecture - 22.5 lab hours
Fulfills core elements: None

This class is designed for beginning students who want to learn the basics of keyboarding as well as those who want to review their skills. Students learn to keyboard by touch and develop technique, speed, and accuracy on the alphabetic, numeric and symbol keys. The use of service keys is also covered. Students learn the basics of Windows software and file management. Basic word processing functions are covered. Students learn to format business correspondence.

BOS 101A. Introduction to Keyboarding.....1 credit hour

Prerequisite: None
7.5 lecture - 22.5 lab hours
Fulfills core elements: None

Introduction to Keyboarding is a short one-credit course taught on IBM compatible computers. Students learn to keyboard (type) by touch and develop speed, accuracy, and proper techniques on the alphabetic keys. This course is useful for beginning keyboarding students as well as those who want to review the basics of the alphabetic keyboard and service keys.

BOS 101B. Keyboarding .....1 credit hour

Prerequisite: BOS 101A or consent
7.5 lecture - 22.5 lab hours
Fulfills core elements: None

Keyboarding (typing) is a short one-credit course taught on IBM compatible computers. It is designed for students who already know the alphabetic keyboard by touch and are keyboarding (typing) at a minimum of 20 words per minute. Students increase speed on the alphabetic keys and improve accuracy and techniques. They learn the number and symbol keys by touch. This course is useful for students who have had typewriting and want to transfer their skills to a computer keyboard.

BOS 101C. Keyboarding and Introductory Document Formatting .....1 credit hour

Prerequisite: BOS 101A and 101B or consent
7.5 lecture - 22.5 lab hours
Fulfills core elements: None

This course is a short one-credit course taught on IBM compatible computers. It is designed for students who already know the alphabetic and numeric keyboard by touch and are keyboarding (typing) at a minimum of 25 words per minute. Students increase speed on the alphabetic and numeric keys, improve accuracy and technique, and apply proofreading concepts. WordPerfect is used to teach formatting of business letters, memorandums, and reports.

BOS 101D. Keyboarding and Intermediate Document Formatting .....1 credit hour

Prerequisite: BOS 101A, 101B, and 101C or consent
7.5 lecture - 22.5 lab hours
Fulfills core elements: None

Keyboarding and Intermediate Document Formatting is a short one-credit course taught on IBM compatible computers. It is designed for students who already know the alphabetic and numeric keyboard by touch, and are keyboarding (typing) at a minimum of 30 words per minute, and have learned to format business correspondence and reports. Students increase speed on the alphabetic and numeric keys, improve accuracy and techniques, and apply proofreading concepts. WordPerfect is used to teach formatting of tables, tabulated reports, and employment documents.

BOS 102. Keyboarding and Document Formatting II.....3 credit hours

Prerequisite: BOS 101 or equivalent (Minimum of 30 wpm with 3errors or fewer for 3 minutes)
37.5 lecture - 22.5 lab hours
Fulfills core elements: 7

This class is a continuation of BOS 101. Students improve touch keyboarding skills through speed, accuracy, and technique drills using computerized, diagnostic software. They learn to format long reports with advanced features, create and format complex tables, and format letters with special features. Using word processing commands and developing speed and control are stressed in producing these documents.

Clerical Methods and Procedures .....4 credit hours

Prerequisite: BOS 101
60 lab hours
Fulfills core elements: 9

In this course students perform a variety of general office duties including processing office mail, handling the telephone, and proofreading/editing. Two extensive practice sets cover filing and payroll activities. In addition, students learn job-hunting procedures and prepare for employment in the clerical field through an understanding of the changing business world.

BOS 107A. Records Management .....1 credit hour

Prerequisite: None
15 lecture - 7.5 lab hours
Fulfills core elements: 9

In this course, students learn the basic principles of modern, widely used filing systems and records management. The course includes indexing and filing personal and business names alphabetically; cross-referencing and geographic filing, numeric filing, and subject filing. Filing equipment and supplies are covered as well as new developments in office filing using the computer, microimages, disks, and tapes.

BOS 107B. Editing and Proofreading .....1 credit hour

Prerequisite: None
15 lecture - 7.5 lab hours
Fulfills core elements: None

In this course, students develop skills in proofreading, editing, and formatting written business communications beginning with simple keyboarding and spelling errors. Students review rules of grammar, punctuation, abbreviations, capitalization, word division, and number expression as well as correct use of words that are frequently confused. This course also includes editing documents for clarity, content, and conciseness.

BOS 107C. Payroll Preparation and Procedures.....1 credit hour

Prerequisite: None
15 lecture - 7.5 lab hours
Fulfills core elements: 9

In this course, students use an extensive practice set to cover payroll activities which include different methods of preparing payroll wages and salaries. Students Practice payroll procedures in a simulation of a small manufacturing business by preparing a three-week payroll for employees on a manual basis. Basic payroll records and reports are completed.

BOS 107D. Clerical Communications and Job Skills .....1 credit hour

Prerequisite: None
15 lecture - 7.5 lab hours
Fulfills core elements: None

Students learn job-hunting procedures and prepare for employment in the clerical field through an understanding of the changing business world. Preparation of effective resumes, letters of application, and interview techniques are covered. Students learn to process office mail using a variety of media including electronic and faxing service. Students also learn the correct use of the telephone in the business world.

BOS 130. Business Machines.....3 credit hours

Prerequisite none
15 lecture - 30 lab hours
plus a minimum of 6 practice hours
Fulfills core elements: 4,5,7

This course emphasizes the use of electronic business calculators in problem-solving activities. Students give serious attention to efficient machine operation, verifying techniques, machine programming, and the concepts of business mathematics widely used in both business and personal situations. The emphasis given to business mathematics helps students to understand and perform many office jobs successfully and to manage personal matters effectively.

BOS 151. Information Processing Principles and Applications.....4 credit hours

Prerequisite: None
60 lecture hours
Fulfills core elements: 7,9,11,12

This course emphasizes jobs, skills, and career opportunities in today's automated office with an examination of all phases of word processing. Students develop skill in creating, storing, retrieving, and revising a variety of documents on microcomputers, including software packages such as word processing, spreadsheet, and database. The course covers ways computers are used in today's business offices, the computer operation cycle, and basic computer vocabulary.

BOS 152. Computerized Transcription.....3 credit hours

Prerequisite: BOS 102 or equivalent, or keyboarding proficinecy
15 lecture - 45 lab hours
Fulfills core elements: 3,9,11,19

This course applies the current dictation/transcription practices found in the modern business office. Students transcribe from tapes of realistic office-style dictation representing a variety of business fields and voices. Mastery of the equipment as well as mastery of transcription skills essential to quality correspondence are emphasized. These skills are stressed in the attainment of acceptable productivity standards.

BOS 157. Microsoft Word for Windows I.....2 credit hours

Prerequisite: BOS 101 or keyboarding proficiency of 30 wpm
30 lecture hours
Fulfills core elements: 7,9,11,20

This course teaches the student to use Microsoft Word with the new, popular graphics Windows interface on an IBM-compatible computer. Skills include creating, editing, and printing documents; using spelling and thesaurus functions; and merging letters. This course can be used to meet the word processing requirement in Business Office Systems Programs and is also open to the general student.

BOS 158. Wordperfect for Windows I .....2 credit hours

Prerequisite: BOS 101 or keyboarding proficiency of 30 wpm
30 lecture hours
Fulfills core elements: 7,9,11,20

This course teaches students to use WordPerfect with the new, popular graphics windows interface on an IBM-compatible computer. Skills include creating, editing, and printing documents; using spelling and thesaurus functions; and merging letters. This course can be used to meet the word processing requirement in Business Office Systems and is also open to the general student.

BOS 174. BOS Co-op I.....1-3 credit hours

Prerequisite: 8 BOS credit, 2.0 GPA in BOS and consent
Fulfills core elements: None

See the description for all co-op courses at the beginning of these course descriptions.

BOS 203. Keyboarding and Document Formatting III.....3 credit hours

Prerequisite: BOS 102 or keyboarding proficiency of 40 wpm
37.5 lecture - 22.5 lab hours
Fulfills core elements: 7

This course is a continuation of BOS 102. Production of documents is emphasized along with advanced word precessing functions to format complex documents. Students improve touch keyboarding skills through speed, accuracy, and technique drills using computerized diagnostic software. They learn to format long complex reports and specialized business documents including proposals, newletters, and agendas. (This course replaces BOS 204 which was formally required in the BOS programs.)

BOS 206. Telecommunications Office Applications.....2 credit hours

Prerequisites: BOS 101, BOS 151
30 lecture hours
Fulfills core elements: 11

This course provides an introduction to the operational and technical aspects of microcomputer communications. Voice mail, electronic scheduling, on-line databases, the Internet, and electronic bulletin boards are covered.

BOS 207. Introduction to Powerpoint .....2 credit hours

Prerequisites: BOS 101 and BOS 151 and BOS 157 or 158
30 lecture hours
Fulfills core elements: 11

This course introduces students to presentation graphics using PowerPoint. Students create slides, charts, special effects, etc. to illustrate information.

BOS 208. Desktop Publishing for the Office .....3 credit hours

Prerequisites: BOS 101 and BOS 151 and BOS 157 or BOS 158
45 lecture hours
Fulfills core elements: 7, 9, 11, 12

This course provides a practical hands-on approach to developing skills in the use of desktop publishing software to create office flyers, newsletters, bulletins, in-house brochures, catalogs, transparency masters, and covers for reports. Students also become familiar with style sheets, templates, and importing material created in other software programs. Emphasis is placed on producing documents in the business office environment that communicate effectively through good design and application of basic concepts of desktop publishing.

BOS 210. Medical Transcription.....3 credit hours

Prerequisite: BOS 102 or equivalent, HSC 101
60 lecture hours, plus a minimum of 4 practice hours
Fulfills core elements: 3,9,11,19

This beginning medical transcription class is for students who have some proficiency in keyboarding and medical terminology. Emphasis is placed on the correct use of medical terms; the correct application of writing rules including capitalization, word usage, and punctuation; the efficient use of hardware including a computer, printer, and transcription machine; the formatting of typical medical documents; the use of medical resources; and the knowledge of current employment opportunities in medical transcription.

BOS 223. Medical Office Procedures .....3 credit hours

Prerequisite: BOS 102 or equivalent
45 lecture - 15 lab hours, plus a minimum of 4 practice hours
Fulfills core elements: 5,7

This course covers administrative assistant responsibilities in a traditional and computerized medical office or hospital including appointments, patient records, pegboard bookkeeping, telephone procedures, credit and collection procedures and medico-legal considerations. Medical insurance is studied. Students complete forms for Blue Cross/Blue Shield, Medicare, Medicaid, Workers' Compensation, CHAMPUS and private insurances using the proper coding system. Students must complete a minimum of four practice hours in addition to regular lecture and lab hours.

BOS 225. Information Processing Systems and Procedures.....3 credit hours

Prerequisite: BOS 151 and BOS 257 or 258
15 lecture - 45 lab hours
Fulfills core elements: 7,8,9,11

This course is designed to provide practical study and advanced training in the use of Microsoft Word, or WordPerfect. 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 credit hours

Prerequisite: Keboarding proficiency of a minimum of 45 wpm or BOS 102 or equivalent. BOS 107 is recommended.
45 lecture - 15 lab hours
Fulfills core elements: 1,9,11,18,19,20

As the capstone of the Administrative Assistant and Medical Assistant programs, this course covers many functions that have been changed by technology. Emphasis is placed on the responsibilities of today's administrative assistant including decision-making, time management, organization and the use of human relation skills. Continuing importance is placed oral and written communications. Students prepare documents such as itineraries, legal documents, minute of meetings, and business reports. The significance of visibility and networking is included in career advancement topics.

BOS 257. Microsoft Word for Windows II.....2 credit hours

Prerequisite: BOS 157
30 lecture hours
Fulfills core elements: 7,9,11,20

This course is a continuation of the introductory course in Microsoft Word for Windows (BOS 157). It introduces students to advanced word processing functions such as macros, style sheets, headers and footers, footnotes, graphics, sorting, forms, and merge. This course meets word processing requirements in Business Office Systems Programs.

BOS 258. Wordperfect for Windows II.....2 credit hours

Prerequisite: BOS 158
30 lecture hours
Fulfills core elements: 7,9,11,20

This course is a continuation of the introductory course in WordPerfect for Windows (BOS 158). It introduces students to advanced word processing functions such as macros, style sheets, headers and footers, footnotes, graphics, sorting, forms, and merge. This course meets word processing requirements in Business Office Systems Programs.

BOS 274. BOS Co-op II .....1-3 credit hours

Prerequisite: BOS 174, consent
Fulfills core elements: None

See the description for all co-op courses at the beginning of these course descriptions.

Chemistry (CEM)

CEM 057. Introductory Chemistry.....3 credit hours

Prerequisite: None
45 lecture hours
Fulfills core elements: None

This course offers a basic exposure to chemistry. Students with no background 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 hour

Prerequisite or Corequisite: CEM 057
45 lab 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 credit hours

Prerequisite: High school chemistry or CEM 057
Corequisite: CEM 105L
45 lecture - 45 lab 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 credit hours

Prerequisites: High school chemistry and one year high school algebra or CEM 057
Corequisite: CEM 111L
45 lecture - 45 lab 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 credit hours

Prerequisite: CEM 111 and MTH 169
45 lecture - 75 lab hours
Fulfills core elements: 4,5,7,9,11,12,15

This course covers four major topics in chemistry: kinetics, chemical thermodynamics, chemical equilibria, and electrochem. Laboratory work includes qualitative and quantitative analysis.

CEM 140. Organic Biochemistry .....4 credit hours

Prerequisite: CEM 105 or CEM 111
Corequisite: CEM 140L
45 lecture - 45 lab 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 credit hours

Prerequisite: CEM 111
Corequisite: CEM 211L
45 lecture - 45 lab 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. Analytical Chemistry .....4 credit hours

Prerequisite: CEM 122
30 lecture - 90 lab 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 credit hours

Prerequisite: CEM 122, 211
Corequisite: CEM 222L
45 lecture - 45 lab 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 Worker (CCW)

CCW 100. The Exceptional Child.....3 credit hours

Prerequisite: CCW 101
45 lecture hours
Fulfills core elements: 7,9

For those with no background in special education, this course presents an overview of the various physical, sensory, intellectual, social and emotional differences found in children. Identifying and working with handicapped and gifted children within the regular child care setting is stressed. Various community, state and national resources to assist exceptional children are identified.

CCW 101. Child Development.....3 credit hours

Prerequisite: None
45 lecture 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.

CCW 103. Alternative Programs in Child Care.....3 credit hours

Prerequisite: None
45 lecture 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.

CCW 107. Educational Experiences in Science and Math.....3 credit hours

Prerequisite: CCW 101, CCW 118 & 119 or CCW 174
45 lecture 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.

CCW 108. Expressive Arts for Children .....3 credit hours

Prerequisite: CCW 101
45 lecture hours
Fulfills core elements: 13

This course covers a wide range of artistic experiences including music, creative movement, art and drama. Facilitation of creativity and self-expression is emphasized. Basic materials, techniques and activities are introduced and their application with young children in child care settings is addressed.

CCW 109. Language and Communication ....3 credit hours

Prerequisite: CCW 101
45 lecture 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.

CCW 110. Social/Emotional Development...3 credit hours

Prerequisite: None
45 lecture 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.

CCW 111. Administration of Child Care Programs.....3 credit hours

Prerequisite: CCW 101 and consent
45 lecture hours
Fulfills core elements: 5

Practical aspects of starting and operating a child care center are presented: equipment selection, budgeting, administrative forms, taxes, insurance, operational management, interpersonal relations, and staff training and supervision, and professionalism. State and federal guidelines and current issues in legislation and policy are also examined.

CCW 113. Health, Safety and Nutrition for Child Care .....3 credit hours

Prerequisite: None
45 lecture 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.

CCW 118. Beginning Child Care Seminar .....1 credit hour

Prerequisite or Corequisite: CCW 101
Corequisite: CCW 119
15 lecture hours

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.

CCW 119. Beginning Child Care Practicum.....2 credit hours

Prerequisite: CCW 101 and consent
Corequisite: CCW 101 (if not taken as a prerequisite), CCW 118
240 experiential hours
Fulfills core elements: None

This course provides supervised teaching experience with young children in a licensed child card center. Students must take this course with CCW 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 CCW Program Advisor prior to registering for this course. Students will be placed with a qualified supervising teacher in a licensed child care center either at WCC or off campus.

CCW 122. Child Development Credentialing I .....4 credit hours

Prerequisite: 18 years old, High School graduate
60 lecture 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.

CCW 123. Child Development Credentialing II .....4 credit hours

Prerequisite: CCW 122
60 lecture hours
Fulfills core elements: 7

This course is a continuation of CCW 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.

CCW 124. CDA Assessment Preparation .....1 credit hour

Prerequisite or Corequisite: 120 hours of CDA approved instruction and 480 hours of direct work with children
15 lecture 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 the required hours of instruction and experience. Students seeking CDA recredentialing receive assistance with their professional development plan and preparation for reassessment.

CCW 152. Parenting Your Preschooler .....1 credit hour

Prerequisites: None
15 lecture hours
Fulfills core elements: None

This course is for parents of children ages 2 1/2 through 5--the preschool years. Included are developmental characteristics of the preschooler, effective child guidance techniques, dealing with typical behavior problems and answering preschoolers' questions. Discussion will include choosing appropriate activities for your child, reading with children and effects of television and child care on child behavior and development. This course is graded on a Pass/No Pass system.

CCW 153. Parenting Your School-Age Child...1 credit hour

Prerequisites: None
15 lecture hours
Fulfills core elements: None

This course is designed for parents of children ages 6 through 11--the elementary school years. Included are characteristics of the school-aged child, developmentally appropriate discipline strategies, helping children do well in school, and dealing with problems of normal development. Discussions include how to talk with children about drugs, sex, and the role of extracurricular activities. This course does not meet DSS requirements for Day Care Licensing but may be used as an elective. This course is graded on a Pass/No Pass system.

CCW 154. Parenting Your Teenager..... 1 credit hour

Prerequisite: None
15 lecture hours
Fulfills core elements: None

This course is designed for parents of children ages 12 through 17--the middle and high school years. Included are handling teenager's behavior, working with the school to improve academic achievement, and dealing with the threats of drug abuse, premarital sex, and rebellion against parental values. Discussions emphasize helping the teenager make wise choices and decisions, asserting his or her independence from parents in healthy ways, and dealing with pressure. This course does not meet DSS requirements for Day Care Licensing but may be used as an elective. This course is graded on a Pass/No Pass system.

CCW 174. CCW Co-op Education I-A.....1-3 credit hours

Prerequisite: consent
Fulfills core elements: None

See the description for all co-op courses at the beginning of these course descriptions.

CCW 176. CCW Co-op Education I-B .....1-3 credit hours

Prerequisite: and consent
Fulfills core elements: None

See the description for all co-op courses at the beginning of these course descriptions.

CCW 200. Staff/Parent Interpersonal Relations .....3 credit hours

Prerequisite: CCW 101, 118 and 119 OR 174, Completion of 50 credits in the CCW Program
45 lecture 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.

CCW 218. Advanced Child Care Seminar .....1 credit hour

Prerequisite: CCW 101, CCW 118 & 119, or CCW 174, HSC 131 or equivalent
Corequisite: CCW 219 and consent
15 lecture hours
Fulfills core elements: 1,3,7,9 with CCW 219

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 CCW program advisor the semester before enrolling to confirm eligibility and select the appropriate work.

CCW 219. Advanced Child Care Practicum .....2 credit hours

Prerequisite: CCW 101, CCW 118 & 119 or 174, HSC 131 or equivalent and permission from CCW Program Advisor
Corequisite: CCW 218
240 experiential hours
Fulfills core elements: 1,3,7,9 with CCW 218

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; placements are arranged with the CCW Program Advisor prior to enrolling in the course.

CCW 220. Care and Development of Infants and Toddlers .....3 credit hours

Prerequisite: CCW 101
45 lecture 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 practic e 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.

CCW 274. CCW Co-op EducationII .....1-3 credit hours

Prerequisite: CCW 174 or 118 and 119
Fulfills core elements: None

See the description for all co-op courses at the beginning of these course descriptions.

Communications (COM)

COM 101. Fundamentals of Speaking .....3 credit hours

Prerequisite: None
45 lecture hours
Fulfills core elements: 1,7,8,9,10

Instruction is provided in essential speaking and listening skills. Through the use of practical experience, students receive help in organization and delivery. The course attempts to relieve the stress the average person encounters when speaking in public. Students gain a heightened awareness of the relationship between speaker and audience.

COM 102. Interpersonal Communication .....3 credit hours

Prerequisite: None
45 lecture hours
Fulfills core elements: 1,7,9,10

This course offers basic elements of interpersonal communication in both theory and practice. Such concepts as self-esteem, perception, emotions, listening, and non-verbal communication are stressed. Particular attention is paid to building positive relationships and resolving conflict within groups, dyads, family, and on the job.

COM 130. Introduction to Mass Communication .....3 credit hours

Prerequisite: None
45 lecture hours
Fulfills core elements: 7,13,22

This survey course investigates various mass media such as print, cinema and electronic 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 by using examples of the media studied.

COM 142. Oral Interpretation of Literature .....3 credit hours

Prerequisite: None
45 lecture hours
Fulfills core elements: 1,13,14

This course is an introduction to the act of communicating thought and feeling from the printed page to an audience. Emphasis is placed on developing poise and ease before an audience and developing a clear and forceful voice. Selections from drama, prose, and poetry are prepared and presented in class.

COM 183. Advanced Public Speaking and Persuasion .....3 credit hours

Prerequisite: None
45 lecture hours
Fulfills core elements: 7,8,10

This course is a continuation of theory and practice in the principles of effective public speaking. The course includes practice in securing the acceptance of ideas through psychological appeal as well as logical reasoning.

COM 200. Family Communication .....3 credit hours

Prerequisite: COM 102
45 lecture hours
Fulfills core elements: 7,8,14

In this course students learn to promote healthy communication skills within the family. Major emphasis is on theories of family development, types of families, power, decision making, stress within the family, and other issues of concern to the family. The course focuses on ways to improve family communication.

Computer Information Systems (CIS)

CIS 090. Computers for Novices.....2 credit hours

Prerequisite: None
30 lecture hours
Fulfills core elements: 11,12

This course is designed for the non-computer major to learn basic computer terminology, develop skills to operate a variety of micro computers, learn how to use the computer as a problem solving tool, and to evaluate hardware and software.

CIS 100. Introduction to Computers.....3 credit hours

Prerequisite: None
22.5 lecture - 22.5 lab hours
Fulfills core elements: 7,11,12,18,19,20

This course teaches computer novices how to use computers, together with the terms and concepts needed. It emphasizes how to use a microcomputer, and how to use software packages such as spreadsheet, word processing, and database. The course teaches the basic vocabulary of computers, how computers are used in today's world, the basic cycle of computer operation, input and output devices, how computers follow directions and store information. This course is also taught as a telecourse using the series "The New Literacy." It is recommended that students who do not know how to type take BOS 101A as a pre- or co-requisite.

CIS 100A. Basic Introduction to Computers...1 credit hour

Prerequisite: None
15 lecture hours
Fulfills core elements: 11,12,18,19,20 (when CIS 100A, B, and C are completed)

This course teaches computer novices how to use computers, together with the terms and concepts needed. It emphasized how to use a microcomputer and how to use software packages, with an emphasis on word processing. The course teaches the basic vocabulary of computers, how computers follow directions and store information. This course, along with CIS 100B and CIS 100 C meets the same objectives as CIS 100 and the three meet the requirements of CIS 100. It is recommended that students who do not know how to type take BOS 101A as a pre- or co-requisite.

CIS 100B. Introduction to Computers - Part 2 1 credit hour

Prerequisite: CIS 100A
15 lecture hours
Fulfills core elements: 11,12,18,19,20 (when CIS 100A, B, and C are completed)

This course teaches computer novices how to use computers, together with the terms and concepts needed. It emphasized how to use a microcomputer and how to use software packages, with an emphasis on spread sheets. The course teaches the basic vocabulary of computers, how computers follow directions and store information. This course, along with CIS 100A and CIS 100 C meets the same objectives as CIS 100 and the three meet the requirements of CIS 100. It is recommended that students who do not know how to type take BOS 101A as a pre- or co-requisite.

CIS 100C. Introduction to Computers - Part 3 1 credit hour

Prerequisite: CIS 100B
15 lecture hours
Fulfills core elements: 11,12,18,19,20 (when CIS 100A, B, and C are completed)

This course teaches computer novices how to use computers, together with the terms and concepts needed. It emphasized how to use a microcomputer and how to use software packages, with an emphasis on data management system. The course teaches the basic vocabulary of computers, how computers follow directions and store information. This course, along with CIS 100A and CIS 100B meets the same objectives as CIS 100 and the three meet the requirements of CIS 100. It is recommended that students who do not know how to type take BOS 101A as a pre- or co-requisite.

CIS 101. Basic Computer Skills for Hospital Professionals.....2 credit hours

Prerequisite: None
15 lecture - 15 lab 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 103. MSDOS Commands.....1 credit hour

Prerequisite: None
15 lab hours
Fulfills core elements: 7,9,11,12

This course covers the syntax, editing and use of elementary DOS commands and help facility. The operations and use of the hardware components of a personal computer system and function of the DOS software is discussed. Students prepare different types of disks, use subdirectories and manipulate files in sub-directories through DOS commands.

CIS 104. Advanced MSDOS .....1 credit hour

Prerequisite: CIS 103 or equivalent
15 lab hours
Fulfills core elements: 7,9,11,12

This course covers all commands for enhancing the microcomputer system operating environment by using DOSKEY and by building macros, batch and configuration files. The students learn disk informational and organizational commands. Redirection and customization of input/output devices and filter commands is also covered.

CIS 107. Spreadsheet Software .....2 credit hours

Prerequisite: None
30 lab hours
Fulfills core elements: 7,11

This is an individualized course for persons wishing to learn how to use an electronic spreadsheet on a personal computer. Individuals may choose any spreadsheet software package approved by the instructor for which licensed training materials are available at the College or other mutually acceptable location. The course utilizes one-to-one instructor guidance as needed while students work with tutorial guides and software. Individuals may work at their own pace. It is recommended that students who do not know how to type take BOS 101A as a pre- or co-requisite.

CIS 108. Software Tools (Special Software).....2 credit hours

Prerequisite: None
30 lab hours
Fulfills core elements: 11

This is an individualized course for students wishing to learn how to use an application package on a personal computer. Individuals may choose any application software package approved by the instructor for which licensed training materials are available at the College or other mutually acceptable location. The course utilizes one-to-one instructor guidance as needed while students work with tutorial guides and software. Individuals may work at their own pace. It is recommended that students who do not know how to type take BOS 101A.

CIS 109. Database Software .....2 credit hours

Prerequisite: None
30 lab hours
Fulfills core elements: 7,11

This is an individualized course for persons wishing to learn how to use a database management system on a personal computer. Individuals may choose any database management system approved by the instructor for which licensed training materials are available at the College or other mutually acceptable location. The course utilizes one-to-one instructor guidance as needed while students work with tutorial guides and software. Individuals may work at their own pace. It is recommended that students who do not know how to type take BOS 101A as a pre- or co-requisite.

CIS 110. Business Computer Systems.....4 credit hours

Prerequisite: None
60 lecture hours
Fulfills Core Elements: 11, 12, 18, 19, 20

This course provides an overview of Business Information Systems. Students learn about computer terminology, hardware and software, ethics and protocols, database management systems, types of information systems, societal impact, information systems and program development. Students use business application software, including word processing, electronic spreadsheets, database, and presentation graphics to implement information systems. It is recommended that students who do not know how to type take BOS 101A as a pre- or co-requisite.

CIS 113. MS Windows .....3 credit hours

Prerequisite: CIS 103
45 lab hours
Fulfills core elements: 7,9,11,12

This course introduces students to the graphical environment of the MS Windows program that enables users to perform file management tasks, run other programs, manage data exchange with non-windows applications, use the clipboard and dynamic data exchange and run batch files. Students install the Windows program on a stand-alone computer or on a network workstation, examine the Windows environment, optimize operating system and computer resources, customize the initialization and setup files and DOS application sessions.

CIS 116. Windows Operating System I .....1 credit hours

Prerequisite: none
15 lecture hours
Fulfills core elements: none

This course teaches the use of a graphical user interface and operating system to allow a user to operate a personal computer. The hardware components and the operating software of a microcomputer system are discussed. Students learn the basic functions of the operating system through hands-on experiences. This course is an update of the MSDOS Commands course which has been incorporated into the Windows operating system. Respect for the rights of others and proper security measures will be discussed. Windows 95 is currently used in the course.

CIS 117. Windows Operating System II .....1 credit hours

Prerequisite: CIS 116 or equivalent
15 lecture hours
Fulfills core elements: none

This course teaches the use of the operating system with a graphical user interface to maintain, troubleshoot and repair, and customize a microcomputer system. The use of the older MSDOS operating system will be covered. Respect for the rights of others and proper security measures will be discussed. Windows 95 is currently used in the course.

CIS 118. MS DOS for Technicians .....2 credit hours

Prerequisite: CIS 117 or equivalent
30 lecture hours
Fulfills core elements: none

This course introduces students to the use of MSDOS 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.

CIS 121. Beginning Unix .....2 credit hours

Prerequisite: CIS 100 or CIS 110 or consent
30 lecture hours
Fulfills core elements: 7,8,9,11,19

This course introduces UNIX System V tools to both experienced computer users and to students with only a basic knowledge of computers. The course covers orientation to UNIX, the UNIX file system, mail, standard UNIX editors, text and information processing, file and directory organization with the commands for their management and manipulation, and standard UNIX utilities. Students also write simple UNIX shell programs.

CIS 125. Local Area Networks I .....2 credit hours

Prerequisite: CIS 100 or CIS 110 or CIS 116 or CIS 117 or CIS 118 or consent
30 lecture hours
Fulfills core elements: 9,11,12

This course is an introduction to Novell Netware and to local area network technology. Topics covered include: terminology, batch files, trustee rights, the MAP command, the inheritance rights mask, Login Scripts, command line and menu utilities, and network printing. This course is intended for anyone possessing a basic knowledge of DOS, including basic DOS batch files, who is interested in learning about Local Area Networks.

CIS 152. Introduction to Excel.....2 credit hours

Prerequisite: CIS 100 or CIS 110, or consent
30 lecture hours
Fulfills core elements: 5,7,11

This introductory course covers the use of Excel spreadsheet software for solving problems in business, finance, and other areas that involve calculation and tabulation. Topics include command menus, formulae, and graphs; how to copy, move, sort, insert, delete, and print information and how to create, sort, and search spreadsheet data records. The course should be useful to those who need to solve mathematical problems and/or generate reports of the results.

CIS 160. Exploring the Internet.....2 credit hours

Prerequisite: None
30 lecture hours
Fulfills core elements: 11,12

This course teaches the use of telecommunications on the Internet. Students learn how to access this international network. Using various tools, they communicate with other users and search for and retrieve information. Respect for the rights of others and proper security measures are discussed. It is recommended that students have some experience using a computer. Students enrolling in this course will be required to sign an agreement on acceptable computer usage.

CIS 174. CIS Co-op I.....1-3 credit hours

Prerequisite: 6 CIS hours and consent
Fulfills core elements: None

See the description for all co-op courses at the beginning of these course descriptions.

CIS 182. Introduction to MS Access.....2 credit hours

Prerequisite: CIS 100 or CIS 110 consent
30 lecture hours
Fulfills core elements: 11,12

In this introductory course, students use MS access software to learn the basic concepts of a relational database. The coursework covers the installation and use of Microsoft Access to create databases, enter data, maintain data, perform sorts and create reports. Experience working with a computer is helpful but not required.

CIS 221. UNIX Tools and Scripts.....2 credit hours

Prerequisite: CIS 121 or consent
30 lecture hours
Fulfills core elements: 7,8,9,11,12,19

This course enables students to use UNIX more efficiently by learning advanced forms of 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 and awk and how to effectively use regular expressions, as well as constructs and special commands used in writing shell scripts. Topics covered include functions, traps, arithmetic on variables, and input/output techniques. In addition, emphasis is placed on understanding how the UNIX shell operates. If time permits, the Korn shell will also be studied.

CIS 225. Local Area Networks II.....2 credit hours

Prerequisite: CIS 125 or consent
30 lecture hours
Fulfills core elements: 9,11

This course is designed for network users who are familiar with Novell trustee rights, mapping, login scripts, and network printing. Emphasis is on supervisory issues such as hardware and software installation, supervisory options of the Syscon utility, the system login script, creation of new users, console commands, the use of FCONSOLE, and the Netware menu utility.

CIS 238. PC Assembly Language.....3 credit hours

Prerequisite: One semester computer programming language
45 lecture hours
Fulfills core elements: 7,8,9,11,18

This is a first course in the 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.

CIS 240. Career Practices Seminar.....2 credit hours

Prerequisite: ENG 100
30 lecture hours
Fulfills core elements: None

This course covers career options available in the computer industry, how to develop a career plan, preparing a job hunting plan, hiring practices, resume preparation, interviewing skills, writing a journal of job-seeking activities, salary negotiations, customer relations and how to succeed on the job.

CIS 260. Web Site Management.....2 credit hours

Prerequisite: CIS 160 or consent
30 lecture 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 (OSP), 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 MS Windows. Participants can set up personal or organizational Web sites for class credit.

CIS 265. Programming the Web .....3 credit hours

Prerequisite: none
45 lecture hours
Fulfills core elements: 9,11,12

This course is intended for students who are interested in "programming the web" and who have knowledge of a programming language and also some experience on the World Wide Web. Topics covered include HyperText Markup Language (HTML), Common Gateway Interface (CGI) programming using a variety of languages (Perl suggested), an introduction to JavaScript, and the basic setup of one or more http servers.

CIS 265A. HTML Short Course .....1 credit hours

Prerequisite: None
Fulfills core elements: 11

This course is intended for students who are interested in using HTML to create pages on the World Wide Web. HyperText Markup Language (HTML) including the common tags used in Web pages for formatting, linking to other pages, and the presentation of images will be covered.

CIS 274. CIS Co-op II.....1-3 credit hours

Prerequisite: CIS 174 and consent
Fulfills core elements: None

See the description for all co-op courses at the beginning of these course descriptions.

CIS 275. C Programming Language.....4 credit hours

Prerequisite: One semester computer programming language
60 lecture hours
Fulfills core elements: 7,11

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.

CIS 277. Java for Programmers .....3 credit hours

Prerequisite: CPS 171 or CPS 185 or CPS 275 or consent
45 lecture 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.

CIS 282. Small System Data Base.....3 credit hours

Prerequisite: One semester computer programming language
45 lecture hours
Fulfills core elements: 7,9,11,12

This course is an introduction to relational database theory and practice. Topics covered include: terminology, normal forms, design of the database tables, SQL, 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.

CIS 286. UNIX Systems Administration.....4 credit hours

Prerequisites: CIS 121 or Consent
60 lecture 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 with the UNIX operating system. Topics covered include: startup and shutdown, user accounts, security, automating routine tasks, managing system resources, file systems, back-ups, devices, and networking.

CIS 288. Systems Analysis and Design.....3 credit hours

Prerequisite: One semester computer programming language
45 lecture hours
Fulfills core elements: 7,9,19

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.

CIS 290. Microcomputer Systems Support ...4 credit hours

Prerequisite: CIS 125 and 288 or consent
60 lecture hours
Fulfills core elements: 7,9,11,12,18,19

This is the final class in the Microcomputer Systems Support program. In this class, students gain problem solving skills, practice user training techniques, and consolidate knowledge required for serving as a Microcomputer Systems Support Technician.

CIS 292. Developing Applications with Oracle .....4 credit hours

Prerequisite: CIS 282 or permission of instructor
60 lecture hours
Fulfills core elements: 18,19,20

This course covers Application Development in Oracle8. Students use SQL and PL/SQL to provide application functionality on the server. Developer/2000 Forms and Reports are used to develop the GUI components of applications. For a final project, students will develop an application in Oracle.

Computer Science (CPS)

CPS 171. Introduction to Programming with C++.....4 credit hours

Prerequisite: MTH 169, CIS 100 or 110 or equivalent
60 lecture hours
Fulfills core elements: 9,11,12,18,19,20

This course 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.

CPS 185. Introduction to Visual Basic Programming .....4 credit hours

Prerequisite: CIS 100, or 110 or any programming language and MTH 097 or MTH 163 or High School Algebra or consent
60 lecture hours
Fulfills core elements: 11,19

This is an introductory course in which students learn essential principles of using 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.

CPS 187. Introduction to Fortran Programming .....4 credit hours

Prerequisite: MTH 169
60 lecture hours
Fulfills core elements: 5,7,8,9,11,12,18,19,20

This course is designed for business/engineering/architecture students who need to use FORTRAN. Students learn about problem-solving strategies, top-down program development, and good programming style. Topics include sequential, decision, and interative control structures, subprograms and basic data structures. Students write and execute approximately eight programs including a significant final project. Students are strongly encouraged to become proficient in keyboarding at the level accomplished in BOS 030 before enrolling.

CPS 191. Introduction to LISP Programming .....3 credit hours

Prerequisite: One programming language course or IND 216
45 lecture hours
Fulfills core elements: 5,7,8,9,11,12

This course presents an introduction to the principles and practices of the LISP programming language. Topics covered include the history and applications of LISP, atoms and lists, defining functions, conditionals, iteration, recursion, input and output. Students design and execute several programs covering these topics.

CPS 271. Object Features of C++ .....4 credit hours

Prerequisite: CPS 171 or consent
60 lecture 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.

CPS 272. Data Structures with C++.....4 credit hours

Prerequisite: CPS 271 or 290 or consent
60 lecture 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 285. Advanced Visual Basic Programming .....4 credit hours

Prerequisite: CPS 185 or consent
60 lecture 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 students with a basic understanding of Visual Basic. Among the topics 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 credit hours

Prerequisite: CIS 275 or consent
60 lecture 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 for students with previous experience in the C language. 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 the C++ language.

CPS 293 Visual C++ Windows Programming .....4 credit hours

Prerequisite: CPS 271 or CPS 290 or consent
60 lecture hours
Fulfills core elements: None

This course provides a practical introduction to application development for MS Windows using Microsoft Foundation Class (MFC) Library. Students are expected to have a working knowledge of C++ and should be familiar with Windows concepts such as buttons, menus and the mouse. No prior Windows programming experience is expected. Topics include: MFC's document-view architecture, device contexts and Graphics Device Interface (GDI) functions, Single Document Interface (SDI) and Multiple Document Interface (MDI), and use of standard Windows components such as dialogs, controls, menus toolbars, and status bars.

CPS 295 Advanced Visual C++ Windows Programming .....4 credit hours

Prerequisite: CPS 293
60 lecture hours
Fulfills core elements: None

This course provides in-depth exposure to, and experience with, advanced topics of Microsoft Foundation Classes (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 techniquies. Advanced topics include: sockets, threads, COM servers and containers, ActiveX automation, interprocess communication and syncronization (including semaphores, events, and flags), DAO, ODBC, ADO, DLLs, metafile, multi-media and registry programming.

Construction Technology (CON)

CON 071. Basic Boiler and Heating Systems .....2 credit hours

Prerequisite: MTH 039 and consent
30 lecture hours
Fulfills core elements: None

This is an introductory course in boiler-driven heating systems. Topics covered include terminology, heating systems, heat load calculations, equipment identification and application. This course is based upon the Building Owners and Managers Institute (BOMI) System Maintenance Technician Certification (SMT).

CON 073. Basic Refrigeration Systems .....2 credit hours

Prerequisite: MTH 039 and consent
30 lecture hours
Fulfills core elements: None

This course is designed to introduce basic refrigeration cycle concepts and system components. Primarily designed for facility maintenance staff, it increases the knowledge level of workers whose major work tasks bring them into incidental contact with climate control systems. This course is based upon the Building Owners and Managers Institute (BOMI) System Maintenance Administration Certification (SMA).

CON 075. Basic Air Handling Systems.....2 credit hours

Prerequisite: MTH 039 and consent
30 lecture hours
Fulfills core elements: None

This course reviews the fundamentals of human comfort and the components of HVAC systems. It is primarily directed toward maintenance staff whose major work tasks involve air cleaning devices and indoor air quality, water conditioning and treatment, and plumbing systems. Fire protection and alarm systems complete the diverse systems this course reviews.

CON 077. Building Control Systems .....2 credit hours

Prerequisite: Consent
30 lecture hours
Fulfills core elements: None

Students learn about various building temperature control systems and their components. The course provides a basic understanding of control theory and describes components of pneumatic, electric, and electronic control.

CON 079. Electrical Systems and Illumination .....2 credit hours

Prerequisite: Consent
30 lecture hours
Fulfills core elements: None

This course enables students to operate and maintain a building's electrical equipment. The course demonstrates how to maintain electric motors and lighting fixtures. It is based upon the Building Owners and Managers Institute (BOMI) System Maintenance Administrator Certification (SMA).

CON 100. Residential Blueprint Reading .....3 credit hours

Prerequisite: MTH 039
45 lecture hours
Fulfills core elements: None

This elementary blueprint reading course emphasizes the development of visualization skills and the study of practices and symbols for interpreting residential prints. Smaller scale construction prijects are studied.

CON 102. Construction Theory and Practice I .....4 credit hours

Prerequisite: MTH 039
45 lecture - 15 lab hours
Fulfills core elements: None

This is the first of two courses that examine the theoretical concepts of the construction industry. It is designed for those students who have limited experience and access to the construction field. Basic techniques are discussed and demonstrated.

CON 107. Basic Soil Mechanics.....3 credit hours

Prerequisite: None
45 lecture hours
Fulfills core elements: None

This course is designed for members of the construction and inspection community to provide information regarding basic soil mechanics. Topics covered include: Laboratory testing procedures and reports, identification and classification of soil types, and descriptions of soil characteristics. This course covers rock mechanics, foundation design, soil-handling, equipment, quarry operations and advances in soil technology.

CON 112. Blueprint Reading for Construction .....2 credit hours

Prerequisite: None
30 lecture hours
Fulfills core elements: None

This course is for those students seeking to obtain print reading skills for intermediate and large scale construction projects. Emphasis is on the application of Blueprint Reading skills, principles and fundamentals of the construction process.

CON 121. Property Maintenance I .....3 credit hours

Prerequisite: MTH 039
45 lecture hours
Fulfills core elements: None

This course teaches basic skills and techniques used in carpentry, masonry, plumbing, electricity and other building trades to improve ability to repair and maintain a structure and its systems.

CON 171. Woodworking .....3 credit hours

Prerequisite: MTH 039
30 lecture - 60 lab hours
Fulfills core elements: None

This is a lecture and laboratory course in woodworking as it relates to furniture and cabinetry. Knowledge and skills necessary for working with hand and machine tools are developed. Projects are worked on and completed during class time. Hand tools and materials are furnished by students.

CON 174. CON Co-op Educationl .....1-3 credit hours

Prerequisite: consent
Fulfills core elements: None

See the description for all co-op courses a the beginning of these course descriptions.

CON 202. Construction Theory and Practice II .....4 credit hours

Prerequisite: CON 102 or consent
45 lecture - 15 lab hours
Fulfills core elements: None

This is the second of a two-course series that examines the theoretical concepts of the construction industry. Building on the concepts of the first course, students are provided laboratory experiences that introduce fabrication techniques common to the industry. Students must provide their own hand tools for this course.

CON 271. Advanced Cabinetry.....3 credit hours

Prerequisite: CON 171
30 lecture - 60 lab hours
Fulfills core elements: None

This course is a continuation of CON 171 in which students design and develop more advanced and complex projects. Student skills and knowledge of materials and techniques are improved.

CON 274. CON Co-op Education II .....1-3 credit hours

Prerequisite: CON 174 and consent
Fulfills core elements: None

See the description for all co-op courses at the beginning of these course descriptions

Correctional Science (COR)

COR 110. Basic Corrections Office Academy .....13 credit hours
Prerequisite: None
171 lecture 105 lab hours
Fulfills core elements: 7,16,21,22
This course teaches basic correction officer skills to individuals seeking employment as county corrections officers, local lock-up officers, and juvenile detention facility employees.

COR 122. Introduction to Corrections.....3 credit hours
Prerequisite: None
45 lecture hours
Fulfills core elements: 2,7,8,22
This course is an introduction to the correctional system from historical to contemporary times. Examined are incarceration, probation, parole, and new programs in dealing with offenders.

COR 132. Correctional Institutions .....3 credit hours
Prerequisite: None
45 lecture hours
Fulfills core elements: None
This course is designed to examine the various types of correctional institutions and the training of the personnel who staff them. There is also an examination of the rights and responsibilities of both staff and inmates to include the social effects upon each.

COR 211. Legal Issues in Corrections.....3 credit hours
Prerequisite: None
45 lecture hours
Fulfills core elements: 7,22
This course gives students an overview of the law as it currently applies to the field of corrections. Included is an in-depth look at the application of the Constitution and the court processes, including prisoners' rights and section 42, 1983 concerns.

COR 219. Client Relations in Corrections .....3 credit hours
Prerequisite: None
45 lecture hours
Fulfills core elements: 7,21
This course is designed to provide students with a general knowledge of the various meanings and functions of cultures as they might apply to the corrections setting. In addition, students are introduced to the impact of discrimination in corrections and the melting pot concept. There is also work on how one's attitudes are formed and how their background has an impact on them. Students are also exposed to the interaction approach in dealing with the correctional client, and the proper responses within the walls.

COR 228. The Correctional Client: Growth and Development .....3 credit hours
Prerequisite: None
45 lecture hours
Fulfills core elements: 7
The course is designed to examine the growth and development of the correctional client, with a particular emphasis on the early environment, psychological and sociological factors, specific problems (i.e. substance abuse, sexual, medical, mental, etc.) and intervention strategies.

Criminal Justice (CJT)

CJT 100. Introduction to Criminal Justice.....3 credit hours
Prerequisite: None
45 lecture 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 credit hours
Prerequisite: Consent of Public Service Training Director
80 lecture 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 credit hours
Prerequisite: None
45 lecture hours
Fulfills core elements: 7,9,21,22
The role of 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 .....2 credit hours
Prerequisite: None
30 lecture hours
Fulfills core elements: 7,8,9,22
This is a normative ethics course that will examine values and issues relevant to success in the Criminal Justice area. The course includes personal values clarification, historical ethics and applied ethics.

CJT 122. Introduction to Corrections .....3 credit hours
Prerequisite: None
45 lecture hours
Fulfills core elements: 2,7,8,22
This course is an introduction to the correctional system from historical to contemporary times. Examined are incarceration, probation, parole, and new programs in dealing with offenders.

CJT 205. Applied Psychology for Police.....3 credit hours
Prerequisite: None
45 lecture hours
Fulfills core elements: 7,16,21
Principles of psychology relevant to specific applications in law enforcement, and major psychological theories are viewed from the perspective of their application to law enforcement practices. Much of the course content deals with abnormal behaviors which police often encounter and proper techniques used to deal with them.

CJT 208.Criminal Evidence and Procedure ..3 credit hours

Prerequisite: None
45 lecture 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 credit hours

Prerequisite: None
45 lecture 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 221. Law Enforcement Training .....16 credit hours

Prerequisites: 45 credit hours and successful completion of the Michigan Law Enforcement Training Council (MLEOTC) pretest
356.4 lecture - 237.6 lab hours
Fulfills core elements: 1,7,9,15,16,21,22

This is a basic law enforcement training program, also known as the Police Academy. It is intensive and challenging. The curriculum, established by the MLEOTC, includes physical conditioning, defensive tactics, firearms, and first aid as well as subjects requiring extensive reading, writing, and note-taking skills. Students must adhere to regulations in the policy and procedures manual. Students successfully completing the course are eligible for the mandatory mastery examination administered by the MLEOTC for certification as a law enforcement person. The class meets at least 8 hours per day, 5 days per week for 13 weeks. Some weekends may also be involved. (Drug screening occurs prior to employment, as established by law.)

CJT 223. Juvenile Justice .....3 credit hours

Prerequisite: None
45 lecture 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 credit hours

Prerequisite: None
45 lecture 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 credit hours

Prerequisite: None
45 lecture 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 credit hours

Prerequisite: None
45 lecture 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 credit hours

Prerequisite: None
45 lecture 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 111. Elementary Food Preparation.....6 credit hours

Prerequisite: None
30 lecture - 195 lab hours
Fulfills core elements: 5,7,9

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.

CUL 118. Principles of Nutrition.....3 credit hours

Prerequisite: None
45 lecture 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 150. Food Service Management.....6 credit hours

Prerequisite: None
30 lecture - 195 lab hours
Fulfills core elements: 1,3,5,7,8,9,11

Students demonstrate service and supervisory techniques utilized in the operation of the Artist's Gallery, a full-service restaurant. Guest speakers, tours and classroom discussions follow the lab, covering issues of sales, marketing, advertising, 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 174. CUL Co-op Education I.....1-3 credit hours

Prerequisite: 30 hours in program and consent
Fulfills core elements: None

See the description for all co-op courses at the beginning of these course descriptions.

CUL 203. Classic Hotel Cuisine .....1 credit hour
Prerequisite: None
15 lecture - 30 lab hours
Fulfills core elements: None
Students are introduced to various culinary preparations that are popular in restaurants and hotels. The course will explore classical cuisine of France, Italy, and the Orient. Food colors, textures and artistic plate presentation are covered.

CUL 204. Vegan Vegetarian Cuisine .....1 credit hour
Prerequisite: None
15 lecture hours
Fulfills core elements: None
Students prepare nutritious meatless dishes utilizing various culinary techniques. Emphasis is placed on optimum food quality attained through proper cooking temperatures and processes. Students also prepare vegetarian desserts and baked goods.

CUL 210. Garde Manger.....4 credit hours
Prerequisite: CUL 111 or consent
90 lab hours
Fulfills core elements: 7
Students demonstrate classical cold food preparation and buffet presentation techniques. Students progress to more elaborate preparation such as those used in designing catering banquets and mirror displays. Students learn methods related to the preparation of pates and galantines, terrines, ice sculpting, hors d'oeuvres, and buffet salads.

CUL 219. Elementary Baking and Pastries ...4 credit hours
Prerequisite: None
45 lecture - 45 lab hours
Fulfills core elements: 7,9,18
Students are instructed in the production of baked goods such as breads, pastries, and desserts, for presentation and sale in the Artist's Gallery Restaurant, utilizing basic production techniques.

CUL 220. Organization and Management of Food Systems .....3 credit hours
Prerequisite: CUL 100 or consent
45 lecture 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 Controls.....3 credit hours
Prerequisite: None
45 lecture 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 225. Advanced Baking and Pastry .....4 credit hours
Prerequisite: CUL 219 or consent
30 lecture - 60 lab hours
Fulfills core elements: 4,7,9,18
Building on principles learned in baking and pastries, students learn production techniques in classical pastry items such as tortes, French pastries, and puff pastries, and utilization of various food products such as chocolates, pulled sugar, marzipan, and other food items used for culinary displays.

CUL 227. Advanced Culinary Techniques.....4 credit hours
Prerequisite: CUL 210, CUL 230, Cul 231
45 lecture - 45 lab hours
Fulfills core elements: 7
Students will utilize skills and techniques developed throughout the program in the production of advanced culinary preparations; including show plates, platters, and ice carvings to be entered in culinary competition. Opportunities may be available for students to participate in American Culinary Federation (ACF) and National Ice Carving Association (NICA) student-level competition.

CUL 228. Layout and Equipment .....4 credit hours
Prerequisite: None
60 lecture 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.

CUL 230. Quantity Food Production .....3 credit hours
Prerequisite: CUL 111
Corequisite: CUL 231
23 lecture - 90 lab hours
Fulfills core elements: 5,7,8,18
This course builds on basic preparation and production techniques learned in CUL 111. This course is designed to provide the student with advanced preparation techniques and methods required to produce quality food items in quanity for breakfast, brunches and luncheons buffets. The student demonstrates organization, management and production skills

CUL 231. A La Carte Kitchen.....3 credit hours
Prerequisite: CUL 111
Corequisite: CUL 230
23 lecture - 90 lab hours
Fulfills core elements: 5,7,18
This course is designed to give students the opportunity to advance and refine their skills in quantity cooking, soup, salad, dressings, sauces, entreés, vegetables and starch production. Food preparations will focus on restaurant "cooked to order" production. Emphasis is placed on timing, organization, portioning, and teamwork.

CUL 250. Advanced Service Techniques.....3 credit hours
Prerequisite: None
45 lecture hours
Fulfills core elements: 1,5,7
The students will be exposed to continuous quality improvement issues as they relate to food and beverage identification, service, and management styles. Comparative tastings are a major component of this course.

Dance (DAN)

DAN 101. Beginning Modern Dance I .....1 credit hour
Prerequisite: None
30 lab 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 hour
Prerequisite: None
30 lab hours
Fulfills core elements: 13

This course goes beyond the use of basic movement vocabulary by applying movement to more complex dance phrases and is paced faster than DAN 101.

DAN 105. Beginning Jazz Dance I .....1 credit hour
Prerequisite: None
30 lab 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 hour
Prerequisite: DAN 105 or consent
30 lab 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.

DAN 107. Beginning Ballet I.....1 credit hour
Prerequisite: None
30 lab 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 hour
Prerequisite: DAN 107 or consent
30 lab 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.

DAN 110. Afro-American Dance I.....1 credit hour
Prerequisite: None
30 lab 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 122. Ballroom Dance I.....1 credit hour
Prerequisite: None
30 lab 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 hour
Prerequisite: None
30 lab 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 126. Country Western Dance.....1 credit hour
Prerequisite: None
30 lab hours
Fulfills core elements: 13

Students learn the basics of country western music. They learn to lead, follow and dance the Texas Two Step, Western polka, Schottische, Waltz, Cotton Eyed Joe, and Swing. It is designed for those with limited or no experience or for those who wish to review the basics.

DAN 130. Beginning Clogging I .....1 credit hour
Prerequisite: None
30 lab hours
Fulfills core elements: 13

Students learn the basic clogging steps which are incorporated into dance routines. They learn to clog to Cotton Eyed Joe, Little Liza, Down South, and Old Time Rock-n-Roll. The course is designed for those with no or limited clogging experience.

DAN 180. Dance Appreciation (The World of Dance).....3 credit hours
Prerequisite: None
45 lecture 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 are encouraged to express themselves through basic movement exercises patterned after the culture being studied. Owing to the nature of dance, a high emphasis is placed on video and experiential learning and presentation.

DAN 210. Afro-American Dance II .....1 credit hour
Prerequisite: DAN 110 or consent
30 lab 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, Dixieland, 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.

DAN 222. Ballroom Dance II .....1 credit hour

Prerequisite: DAN 122 or consent
30 lab 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 hour

Prerequisite: DAN 123 or consent
30 lab 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.

DAN 224. Dance Exercise III.....1 credit hour

Prerequisite: DAN 123 or DAN 223
30 lab hours
Fulfills core elements: None

This class is a continuation of DAN 123 and 223. It is designed for students who are looking for a faster paced dance exercise course. This choreographed course of stretching and simple dance routines, set to various types of music, helps trim and recondition the body while providing an excellent maintenance for fairly fit individuals. Discussion of nutrition and the learning of simple relaxation techniques are also a part of this class. No prior dance exercise experience is required, though a fairly high level of fitness is suggested.

Dental Assisting (DEN)

Enrollment priority for these courses is granted to students admitted to this program.

DEN 039. Dental Assistant Review.....1 credit hour

Prerequisite: Graduate or OJT Dental Assistant
15 lecture 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.

DEN 102. Infection Control .....1 credit hour

Prerequisite: None
7 lecture - 17 lab 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 credit hours

Prerequisite: Admission to the Dental Assisting Program or consent
30 lecture hours
Fulfills core elements: 7,16

This course covers the formation and eruption of the teeth, the nervous system, the trigeminal nerve and the types and uses of local and general anesthesia.

DEN 107. Oral Anatomy .....2 credit hours

Prerequisite: Admission to the Dental Assisting Program or consent
36 lecture 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 hour

Prerequisite: Admission to the Dental Assisting Program, DEN 102, or DANB ICE exam
15 lecture hours
Fulfills core elements: 7,18

The principles, techniques, safety precautions, and operation of various types of radiographic film and equipment are studied.

DEN 109. Oral Hygiene.....1 credit hour

Prerequisite: Admission to the Dental Assisting Program
15 lecture hours
Fulfills core elements: 7, 16

This course is designed to give dental assisting students a basic awareness of preventive dentistry. The etiology, prevention, and control of dental caries, and oral hygiene instruction are emphasized.

DEN 110. Basic Clinical Dental Assisting ....4 credit hours

Prerequisite: Admission to the Dental Assisting Program
45 lecture - 45 lab hours
Fulfills core elements: None

This course is an orientation to dental assisting. It provides an overview of the history of dentistry and dental assisting, and the role of the modern dental health team. Students are introduced to the dental treatment room equipment and basic procedures used in the application of the concepts of four-handed dentistry.

DEN 112. Dental Materials .....4 credit hours

Prerequisite: Admission to the Dental Assisting Program
30 lecture - 90 lab 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 116. Four-Handed Dentristy: An Ergonomic Concept ..... ½ credit hours

Prerequisite: none
7.5 lecture hours
Fulfills core elements: none

This course is an overview of the concepts of four-handed dentistry. Dental team members gain experience in applying the principles of motion economy and ergonomics as applied to all aspects of the modern dental practice. Students are introduced to the criteria for equipment selection and the application of OSHA guidelines used in four-handed dentistry.

DEN 119. Dental Nutrition.....1 credit hour

Prerequisite: Admission to the Dental Assisting Program, instructor's permission
15 lecture 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.

DEN 120. Oral Diagnosis Theory .....1 credit hour

Prerequisite: Sucessful completion of DEN 102, DEN 104 and DEN 106
8 lecture - 24 lab 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. Radiography Practicum.....1 credit hours

Prerequisite: DEN 108
22.5 lab - 45 clinical hours
Fulfills core elements: 7,9,18

Using mannequins and patients in the WCC Dental Clinic, students gain experience in making radiographic exposures and practicing radiation safety and infection control techniques. Students demonstrate processing techniques, maintain records, and mount, label and evaluate radiographic films for quality assurance.

DEN 129. Oral Pathology and Dental Therapeutics .....2 credit hours

Prerequisite: 2.0 GPA in DEN 104 and DEN 106
30 lecture 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.....½ credit

Prerequisite: 2.0 GPA in all 1st term DEN courses and HSC 131A or CPR card from ARC or AHA
60 clinical 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.

DEN 130B. Oral Diagnosis Clinical/Practicum..... ½ credit

Prerequisite: 2.0 GPA in DEN 120 and 130A
60 clinical hours
Fulfills Core Elements: 7,16

This course provides students with actual clinical application of all previous knowledge as they gain clinical experience in clinics such as the UofM Dental School. 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.

DEN 131. Principles of Dental Specialties.....4 credit hours

Prerequisite: DEN 110
45 lecture - 45 lab 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 credit hours

Prerequisite: A 2.0 GPA in all Dental Assisting courses through the second semester
280 clinical 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 dentristy. Students become acquainted with a number of office routines, procedures, equipment and patient and staff relationships.

DEN 204. Advanced Functions.....3 credit hours

Prerequisite: 2.0 in all Dental Assisting courses
30 lecture - 30 lab - 45 clinical 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. A student enrolled in this course must have a CPR card current for the semester enrolled.

DEN 212. Dental Practice Management .....4 credit hours

Prerequisite: BOS 101 or equivalent
52.5 lecture - 22.5 lab 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.

Digital Prepress (DPP)

DPP 111. Digital Prepress I .....4 credit hours
Prerequisite: GDT 105 or basic Macintosh proficiency
45 lecture - 45 lab hours
Fulfills core elements: 11,18

This course introduces students to digital prepress. An overview of the offset printing process is covered with an emphasis on preparation of digital publication files for output. Included are units on file preflight using FlightCheck®, computer graphics terminology, digital fonts, raster and vector graphics and imposition.

DPP 117. Introduction to Printing .....4 credit hours
Prerequisite: Basic Macintosh proficiency or GDT 105
45 lecture - 45 lab hours
Fulfills core elements: 18, 20

This course includes a brief survey of printing history and various printing processes stressing modern offset lithography and digital printing. Lectures and hands-on experiences introduce students to terminology, processes, equipment, materials and applications for graphic communications from prepress through bindery operations.

DPP 122. Digital Prepress II .....4 credit hours
Prerequisite: DPP 111
45 lecture - 45 lab hours
Fulfills core elements: 11,18,19

This course provides continuing skills development in digital prepress, focusing on digital color for print reproduction. Included are units on color modes, adjusting color, printing inks, trapping, and producing color separations. Students should be familiar with Quark Xpress®, Adobe Illustrator®, Adobe PageMaker®, and Adobe Photoshop.®

DPP 134. Planning, Binding and Finishing...2 credit hours
30 lecture hours
Fulfills core elements: 18,19

This course examines the prepress planning of printed material, with an emphasis on imposition, cutting, folding and assembly as it relates to all binding and finishing operations. Topics include: saddle, perfect and case binding, embossing, foil stamping, die cutting and coating, material handling and mailing. Students make a hand bound perfect and a hand bound case book in the lab.

Drama (DRA)

DRA 152. Acting for the Theatre .....3 credit hours
Prerequisite: None
45 lecture hours
Fulfills core elements: 1,7,9,13

This class is an introduction to acting through the physical aspects of the stage, using the stage as a vehicle to promote ideas and feelings. Scenes will be assigned.

DRA 153. Acting for the Theatre II.....3 credit hours
Prerequisite: None
45 lecture hours
Fulfills core elements: 1,7,9,13

This course is a continuation of DRA 152. The course focuses upon the continuation in the study and practice of acting techniques and basic technical and presentational areas of direction, lighting, and sound.

DRA 167. Theatre Production.....2 credit hours
Prerequisite: DRA 152
30 lecture hours
Fulfills core elements: 13,14

This is a course in which, through supervised participation in the faculty-directed mainstage theatre production, students gain practical experience in one or more phases of the theatrical arts, including acting, directing, stage managing, lighting, makeup, scenery, publicity, box office, costuming, house management, and properties. Specific duties are arranged with the instructor/director.

Economics (ECO)

ECO 111. Consumer Economics .....3 credit hours
Prerequisite: None
45 lecture hours
Fulfills core elements: 5,7

The wise use of financial resources today requires more than an income-producing job and simple subtraction skills. In this course, students learn the basics of budgeting, money management, use of credit and buying, the intricacies of home ownership, income tax, investments, and the wise use of insurance, wills, and trusts. This course is also taught as a telecourse using the program series "Personal Finances and Money Management."

ECO 211. Principles of Economics I .....3 credit hours
Prerequisite: None
45 lecture 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. This course is also taught as a telecourse using the program series "Economics U$A."

ECO 222. Principles of Economics II .....3 credit hours
Prerequisite: ECO 211 or consent
45 lecture 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. This course is also taught as a telecourse using the program series "Economics U$A."

ECO 280. International Economics .....3 credit hours
Prerequisite: ECO 211
45 lecture hours
Fulfills core elements: 21,23,24

This course in international trade and finance covering topics such as tariffs and quotas, trade agreements, exhange rates, and international finance institutions such as the IMF and World Bank. It is designed primarily for transfer students and those interested in pursuing international business.

Electrical Engineering Technology (EET)

EET 100. DC Circuit Analysis and Measurements .....3 credit hours

Prerequisite: Four years H.S. English, H.S. Algebra and trigonometry
Corequisite: MTH 179 or Consent
45 lecture - 15 lab hours
Fulfills core elements: 5,7,9,18

This is an introductory course in DC circuit design and analysis. The major topics in this course are: branch, nodal and mesh analysis, Thevenin, Norton and other network theorems, and electrical measurements. Other topics include laboratory data collection and interpretation, and report writing.

EET 110. Digital Electronics Design I .....3 credit hours

Prerequisite: EET 100
Fulfills core elements: 5,7,8,9,11
45 lecture - 15 lab hours

This is the first course of a two-course sequence in digital circuit design. There is a major emphasis on computer solutions using standard circuit design packages. Topics include combinatorial and sequential circuit design, digital circuits and logic families, and the design process. Other topics include programming, hardware design using PLDs and an introduction to an eight bit microprocessor.

EET 200. AC Circuit Analysis and Design.....3 credit hours

Prerequisite: EET 100
Corequisite: MTH 286
45 lecture - 15 lab hours
Fulfills core elements: 4,5,7,8,9,11,18

This course is a continuation of the study of electric circuits, emphasizing AC circuit analysis and design. Topics include: sinusoidal waveforms, phasors, impedance, phase relationships, behavior of R, L, and C components, mesh and nodal analysis, network theorems, power, resonance, frequency response, polyphase systems, transformers, and an introduction to transform methods. Test equipment and computer simulation software are used to confirm analyses.

EET 201. Linear Electronics I .....3 credit hours

Prerequisite: EET 100, MTH 178, 179 and 186, PHY 111
Corequisite: EET 200, PHY 122, MTH 286
45 lecture - 15 lab hours
Fulfills core elements: 3,4,5,7,8,9,11,18

This course is the first of a two-course sequence in basic electronics. There is an emphasis on computer solutions to problems with standard software packages. Topics include diodes, transistors and biasing, small signal and power amplifiers, power supply regulation, and filtering.

EET 211. Digital Electronics Design II .....3 credit hours

Prerequisite: EET 110
45 lecture - 15 lab hours
Fulfills core elements: 7, 8, 19

This course is the second of a two-course sequence in digital circuit design. There is a major emphasis on computer solutions to problems with standard software packages. Topics include basic programming and hardware design using a microprocessor to interface with sensors and instrumentation, and data acquisition using the platformPC.

EET 221. Linear Electronics II .....3 credit hours

Prerequisite: EET 201
45 lecture - 15 lab hours
Fulfills core elements: None

This course is the second of a two-course sequence in electronics. There is a major emphasis on computer solutions to problems with standard software packages. Topics include differential amplifiers, the op-amp, op-amp amplifiers, feedback and control theory, summing and instrumentation amplifiers, active filters, and phase-locked loops. The design of standard circuits is emphasized.

EET 230. Motors and Controls.....3 credit hours

Prerequisite: EET 200 and EET 201 or Consent
45 lecture - 15 lab hours
Fulfills core elements: None

This is a course on the theory and operation of AC and DC motors. Topics include series, shunt, and compound DC generators and motors; three phase alternators, induction motors, synchronous motors, standard control circuits used to control circuits used to control speed, reversing, starting and braking.

EET 231. Electronic Communications.....3 credit hours

Prerequisite: EET 201
45 lecture - 15 lab hours

In this course an overview of communications components, circuits, and systems is presented. Topics include communications systems, information theory, noise, oscillators, passive filters, RF amplifiers, modulation, transmission lines and antennas. The selection and compatibility of systems is emphasized with basic circuit design using standard computer software packages.

Electricity/Electronics (ELE)

ELE 040. Residential Wiring.....2 credit hours

Prerequisite: None
45 lab hours
Fulfills core elements: None

This course is a practical hands-on course that has been designed to help students better understand the wiring techniques and safety considerations that must be considered when 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 uses the satisfactory/unsatisfactory system.

ELE 095. Electrical Blueprint Reading .....2 credit hours

Prerequisite: None
45 lecture 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 096. Control Panel Wiring.....2 credit hours

Prerequisite: ELE 095 or consent
23 lecture - 23 lab hours
Fulfills core elements: none

This is an applied course in writing machine control panels. Students work from a blueprint and wire panels to industry standards.

ELE 104. Electrical Soldering .....1 credit hour

Prerequisite: None
15 lecture - 15 lab hours
Fulfills core elements: None

Upon satisfactory completion of this course, students possess the knowledge and skills necessary for entry level employment as a bench soldering technician. The students learn: the different solder alloys and their fluid temperatures; how to control heat and the flow of molten solder; and the proper procedures for removing and replacing common electronic components.

ELE 105. Introduction to Telecommunications.....3 credit hours

Prerequisite: None
45 lecture hours
Fulfills core elements: 10,18,19,20

This is an introductory level course designed to expose the entering student to the concepts, equipment, and terminology used in the telecommunication industry. Topics include: basic telephony, transmission systems, satellite communications, fiber optics, switching systems, data communications, local area networks, and telecommunications management.

ELE 111. Electrical Fundamentals.....4 credit hours

Prerequisite: None
60 lecture - 30 lab 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 134. Motors and Controls .....4 credit hours

Prerequisite: ELE 111
60 lecture - 30 lab 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.

ELE 137. Switching Logic.....4 credit hours

Prerequisite: None
45 lecture - 45 lab 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 microprocessors and PLCs.

ELE 139A. Microprocessors Part A .....2 credit hours

Prerequisite: ELE 137
Corequisite: ELE 140
23 lecture - 23 lab hours
Fulfills core elements: 4,7,9,18,19

This course is an introduction to the physical makeup of a microprocessor-based computer system. The major functional elements of a microprocessor system and their relationship to each other are examined. Topics include data coding, data storage, microprocessor architecture, imput/output devices and machine language programming. The laboratory exercises provide experience with microprocessor hardware and machine language programming.

ELE 140. Software Concepts.....4 credit hours

Prerequisite: None
60 lecture - 30 lab hours
Fulfills core elements: 7,9,11,12,18

Students use standard software design techniques to develop and code algorithms for the solution of electrical and electronics problems, thus gaining a useful tool for problem solution while learning software fundamentals such as understanding the difference between syntax and semantics, refinement of algorithms into working solutions, executing programs on a computer system, correct use of appropriate subsets of a language, development of consistent test cases and preparation of understandable documentation.

ELE 150. PC Hardware Concepts and Troubleshooting.....4 credit hours

Prerequisite: CIS 116 and CIS 117 or evivalent Windows experience
Corequisite: CIS 118
45 lecture - 45 lab hours
Fulfills core elements: 7,9,10,11,18,19

This course is designed for the beginning user and those without a technical background. Through hands-on experiences, students examine the internal hardware components of IBM compatible computers with an emphasis on troubleshooting and repair. Topics covered include what the DOS operating system does and how it works with the computers hardware to run application programs. Studentsl explore how to upgrade and optimize your computer and how to solve typical hardware and software problems using time saving and cost-effective techniques

ELE 155. Advanced Computer Concepts and Troubleshooting .....4 credits

Prerequisite: ELE 150 or equivalent
45 lecture - 45 lab 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 PC's, 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.

ELE 174. ELE Co-op I.....1-3 credit hours

Prerequisite: ELE 111,137, 140 or consent
Fulfills core elements: None

See the description for all co-op courses at the beginning of these course descriptions

ELE 204. National Electrical Code .....4 credit hours

Prerequisite: ELE 111
75 lecture 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 journey persons or master electricians.

ELE 205. Basic Telephony .....4 credit hours

Prerequisite: None
60 lecture - 30 lab hours
Fulfills core elements: 7,18,19

This course covers the theory, maintenance, and installation of telephone systems. Topics include state of the art telephone system technology, basic electromechanical and electronic key systems with emphasis placed on voice systems. Laboratory experiments involve measurements, troubleshooting, transmission line noise analysis, and switching concepts.

ELE 209. Operational Amplifiers.....2 credit hours

Prerequisite: ELE 111 or ELE 123B
22.5 lecture - 22.5 lab hours
Fulfills core elements: 7,9

This course is a lecture and laboratory course covering operational amplifier circuits, active filters, and regulators. Circuits are constructed and tested in the laboratory. Students also learn how to service equipment containing these circuits.

ELE 211. Basic Electronics.....4 credit hours

Prerequisite: ELE 111 or ELE 123B
45 lecture - 45 lab 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.

ELE 216A. Modem Hardware Installation,Configuration and Troubleshooting .....2 credit hours

Prerequisite: ELE 150
22.5 lecture - 22.5 lab 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.

ELE 216B. Data Communications Hardware Standards, Configuration and Troubleshooting .....2 credit hours

Prerequisite: ELE 216A
22.5 lecture - 22.5 lab hours
Fulfills core elements: 7,9,11,18

This course provides the basic knowledge and skills required to install and use data communications equipment, and to operate test equipment and interpret the results. Lecture and lab topics include data communications protocols and standards, data compression, error detection and correction and data communications theory.

ELE 224. Introduction to PLCs .....4 credit hours

Prerequisite: ELE 139 or consent
45 lecture - 45 lab 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 PLC-5, the SLC-500. 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 nad engineers who wish to upgrade their skills.

ELE 225A. Network Installation and Troubleshooting .....2 credit hours

Prerequisites: ELE 150
22.5 lecture -22.5 lab 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.

ELE 225B. Advanced Networking Concepts..2 credit hours

Prerequisite: ELE 225A
22.5 lecture - 22.5lab hours
Fulfills core elements: 7,9,11,18,19

This is a lecture and laboratory course in the theory and practical aspects of advanced networking systems. Major lecture discussions are directed toward telephone system performance requirements, transmission of data, digital modulation and network protocols, multiplexers and internetworking techniques.

ELE 230. Computer System Fundamentals ...4 credit hours

Prerequisites: ELE 140 and ELE 150
60 lecture - 30 lab hours
Fulfills core elements: 7,8,9,11,12,18,19

This course provides the basic knowledge and skills required to operate and perform corrective maintenance on modern, 32-bit micro and minicomputer systems. The uses of operational theory, system block diagrams, and diagnostics as aids in troubleshooting are emphasized. Computer operating system concepts and the use of a system's command language as a hardware maintenance tool are introduced.

ELE 235. Computer System Troubleshooting.....4 credit hours

Prerequisites: ELE 230
60 lecture - 30 lab hours
Fulfills core elements: 7,8,9,11,12,18,19

This course is a continuation of ELE 230. Students develop an integrated knowledge of computer hardware and software concepts with an emphasis on the installation, operation, and maintenance of peripheral controllers and devices (terminals, printers, disk and tape drives). Local Area Network (LAN) concepts and fault isolation tools are introduced.

ELE 240. Career Practices Seminar .....2 credit hours

Prerequisite: ENG 107 or 111
30 lecture hours
Fulfills core elements: None

This course studies career options in the computer and electronics industry. Students learn how to develop a career plan, prepare a job hunting plan and a successful resume. Salary negotiations, interviewing for the job and how to succeed on the job are other topics discussed.

ELE 244. Motion Control .....4 credit hours

Prerequisites: ELE 140,244, or consent
60 lecture - 30 lab hours
Fulfills core elements: 7,9,11,19

This course features the Allen Bradley IMC 120. Topics include programming and applications for multi-axis digital control systems. This course is intended for Electronics technology Program students, technicians, electricians, and engineers who wish to upgrade their skills.

ELE 245. Transmission Systems .....4 credit hours

Prerequisites: ELE 216A or ELE 216B
60 lecture - 30 lab hours
Fulfills core elements: 5,7,9

This course studies the principles of digital and analog transmission systems. Topics covered are transmission codes, conventions, and hierarchy. Specific subjects include the T-1 system, Time Division Multiplexing, Frequency division Multiplexing, multiplexer interfacing and system maintenance.

ELE 250. Microprocessor Interfacing .....4 credit hours

Prerequisites: ELE 137 and 140 or CPS 171
45 lecture - 45 lab hours
Fulfills core elements: 7,8,9,10,11,18,19

This is an advanced level course covering theory, hardware, software and applications of microprocessors. Topics include interfacing with sensors and actuators to control position, velocity, acceleration, temperature, flow rate and pressure. Laboratory exercises provide experience in analyzing and troubleshooting modern microprocessor-based control circuits.

ELE 254. PLC Applications .....4 credit hours

Prerequisites: ELE 224 or consent
45 lecture - 45 lab hours
Fulfills core elements: None

This is an advanced course which features the Allen Bradley PLC 5/15 and the Modicon M-984. Topics include program control instructions, analog I/0, and PID process controls. This course is intended for ECS students and technicians, and industrial electricians and engineers who need to upgrade their skills in the area of PLC applications.

ELE 274. ELE Co-op II .....1-3 credit hours

Prerequisite: ELE 174, consent
Fulfills core elements: None

See the description for all co-op courses at the beginning of these course descriptions

ELE 275. Switching Systems .....4 credit hours

Prerequisite: ELE 205
45 lecture - 45 lab 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 275A. Switching Systems .....3 credit hours

Prerequisite: None
Corequisite: none
45 lecture hours
Fulfills core elements: None

The theory, operation and maintenance of analog and digital switches is studied. Topics include switch programming, diagnostic procedures, system trouble shooting. Customer-owned switching systems are emphasized.

ELE 299. Customer Relations .....1 credit hour

Prerequisite: None
21 lecture 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 which 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 hours

The Writing Center provides three services. First, students enrolled in English 040, 050, 051, 091, 100, and 111 receive additional practice and/or assignments in developing writing skills in the lab. The practice method and assignments vary from course to course. Second, students can receive help on any writing projects from the Center staff. Third, Macintosh computers are available so students may word process their papers.

ENG 010. Writing Practicum.....1 credit hour

Prerequisite: Consent of instructor
15 lab 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. Grading uses the satisfactory/unsatisfactory system.

ENG 020. English as a Second Language I ...8 credit hours

Placement based on oral interview
120 lecture hours
Fulfills core elements: None

This class is designed for students who do not speak or understand spoken or written English. This course teaches survival language necessary for minimum functioning in the community. Grading uses the satisfactory/unsatisfactory system.

ENG 021. English as a Second Language II ..8 credit hours

Placement based on oral interview, successful completion of ENG 020
120 lecture 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. Grading uses the satisfactory/unsatisfactory system.

ENG 022. English as a Second Language III..8 credit hours

Placement based on results of English Placement Test (EPT) or successful completion of ENG 021
120 lecture 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 for daily living. Grading uses the satisfactory/unsatisfactory system.

ENG 030. English as a Second Language IV .....3 credit hours

Placement based on results of English Placement Test (EPT) or successful completion of ENG 022
45 lecture hours
Fulfills core elements: None

This intermediate level course 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. Grading uses the satisfactory/unsatisfactory system. On the recommendation of the instructor, this course may be completed in two semesters as English 030A and English 030B.

ENG 031. English as a Second Language V ..3 credit hours

Placement based on results of English Placement Test (EPT) or successful completion of ENG 030
45 lecture hours
Fulfills core elements: None

This high intermediate/low advanced grammar course includes more complex structures of English, including reduced clauses, word order reversal, and complex verb phrases. Appropriate use of the forms continues to be emphasized. Grading uses the satisfactory/unsatisfactory system. On the recommendation of the instructor, this course may be completed in two semesters as English 031A and English 031B.

ENG 035. English Pronunciation and Conversation .....3 credit hours

Prerequisite: ENG 022 or EPT score of 40+
45 lecture 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. Grading uses the satisfactory/unsatisfactory system.

ENG 040. Basic Writing - ESL .....4 credit hours

Prerequisite: ENG 031, or 75 on EPT
Corequisite: ENG 000
45 lecture - 15 lab hours
Fulfills core elements: None

This course provides opportunities to develop skills in formal written English for non-native speakers of English. It emphasizes rhetorical structures, vocabulary, and a review of selected problem areas in grammar. Grading uses the satisfactory/unsatisfactory system. Successful completion of this course should qualify students for ENG 091 or higher level courses.

ENG 050. Basic Writing I.....4 credit hours

Corequisite: ENG 000
45 lecture - 15 lab 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. It is strongly recommended that students enroll in Reading 045 before or at the same time as this course. Grading uses the satisfactory/unsatisfactory system.

ENG 051. Basic Writing II.....4 credit hours

Corequisite: ENG 000
45 lecture - 15 lab hours
Fulfills core elements: None

This is a continuation of English 050. It meets along with an ENG 050 class but has more advanced writing lab assignments. Grading uses the satisfactory/unsatisfactory system.

ENG 085. Review of English Grammar.....3 credit hours

Prerequisite: none
45 lecture 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 class or a foreign language.

ENG 091. Writing Fundamentals .....4 credit hours

Prerequisite: ENG 051
Corequisite: ENG 000
45 lecture - 15 lab 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 credit hours

Corequisite: ENG 000
45 lecture - 15 lab 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 091 level. This course is intended primarily for native speakers of English. Students must select a writing lab section with this course.

ENG 101. Journalism I.....3 credit hours

Prerequisite: ENG 091 or higher composition course
45 lecture hours
Fulfills core elements: 2,3,7,8,10

This course is an introduction to understanding the demands and effects of journalism in both the electronic and 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.

ENG 107. Technical Communications .....3 credit hours

Prerequisite: None
45 lecture hours
Fulfills core elements: 2,3,7,8,9,10

This course will emphasize the principles of effective communication of technical subjects. Assignments include technical description, graphic communication, and instruction writing. During the first week of class, students must demonstrate a writing proficiency at the ENG 091 level. This course is intended primarily for native speakers of English.

ENG 111. Composition I.....4 credit hours

Corequisite: ENG 000
45 lecture - 15 lab 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 122. Composition II .....3 credit hours

Prerequisite: ENG 111
45 lecture 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 credit hours

Prerequisite: None
45 lecture 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: Poetry and Drama .....3 credit hours

Prerequisite: None
45 lecture 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 credit hours

Prerequisite: None
45 lecture 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 credit hours

Prerequisite: None
45 lecture 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 183. Special Topics in African-American Literature.....3 credit hours

Prerequisite: ENG 181
45 lecture hours
Fulfills core elements: None

This course provides the opportunity for students to continue their study of African American Literature through a more focused study of a specific author, genre or topic. Individual research and writing are emphasized. See time schedule note for the focus of each section.

ENG 185.Grammar and Usage.....3 credit hours

Prerequisite: None
45 lecture 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.

ENG 199. Scientific/Technical Communication Internship.....1-3 credit hours

Prerequisite: ENG 100, 107, 108 and instructor consent
120 - 360 experiential hours
Fulfills core elements: 3,7,20

Advanced students may earn credits while doing commercial scientific and technical communication under academic supervision. This course is not required for the scientific and technical communication degree and may not be available.

ENG 200. Shakespeare .....3 credit hours
Prerequisite: None
45 lecture 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 Communications.....3 credit hours
Prerequisite: None
15 lecture - 45 lab hours
Fulfills core elements: 1,2,3,9,11
This course consists of 15 classroom hours of instruction in each of the following modules: research/interview techniques; editing and proofreading; and introduction to software documentation. Students can sign up for one to three credits and receive one credit for each module satisfactorily completed. Students can work on different modules in different semesters.

ENG 209. Award Winning Documents .....3 credit hours
Prerequisites ENG 208
45 lecture hours
Fulfills core elements: 2,3,7,9,11
This course focuses on putting the components of good manuals into complete documents. It concentrates on perfecting presentations and format, determining the different types of documentation needed, performing in-depth audience analyses, developing sequencing techniques, creating task-oriented documents, testing document outlines, and evaluating completed projects. Students can add four documents with camera-ready text to their portfolios. Documents may include video scripts, manuals, pamphlets, brochures or computer-aided instruction screen flows.

ENG 211. American Literature I .....3 credit hours
Prerequisite: None
45 lecture 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 credit hours
Prerequisite: None
45 lecture hours
Fulfills core elements: 1,3,7,13,14
The course studies English literature from the Anglo-Saxon period through the 18th Century. Readings stress the major works from Beowulf through Neoclassical literature.

ENG 213. World Literature I .....3 credit hours
Prerequisite: None
45 lecture hours
Fulfills core elements: 1,3,7,8,13,14
World Literature 213 and 224 is a sequence which 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 credit hours
Prerequisite: none
45 lecture 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, Near Eastern, and Latin American Literature. This course includes an introduction to each culture and explore how the literature reflects that culture.

ENG 222. American Literature II.....3 credit hours
Prerequisite: None
45 lecture 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 credit hours
Prerequisite: None
45 lecture 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 and Modern periods.

ENG 224. World Literature II .....3 credit hours
Prerequisite: None
45 lecture 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 credit hours
Prerequisite: ENG 122 or instructor's permission
45 lecture hours
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.

ENG 240. Children's Literature.....3 credit hours
Prerequisite: None
45 lecture 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 credit hours

Prerequisite: None
45 lecture 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 245. Career Practice Seminar .....2 credit hours

Prerequisite: ENG 100
30 lecture hours
Fulfills core elements: 1,3

This course covers career options available in the field of technical communication, how to develop a career plan and a job hunting plan, hiring practices, resume preparation, interviewing skills and human relations on the job.

ENG 260. Journal Workshop I .....3 credit hours

Prerequisite: ENG 111 or consent
45 lecture 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 is transferable to four year colleges.

ENG 261. Journal Workshop II .....3 credit hours

Prerequisite: ENG 111 or consent
45 lecture 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 credit hours

Prerequisite: None
45 lecture 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 credit hours

Prerequisite: ENG 270
45 lecture 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.

ENG 278. Magazine Publication .....3 credit hours

Prerequisite: ENG 270
45 lecture hours
Fulfills core elements: 1,7,8

This workshop course produces Northern Spies, WCC's literary journal. Students advertise for writing to be considered for publication, and then read, discuss, select, edit, typeset, and proofread work submitted by WCC writers. Students learn critical thinking, discussion, and decision-making skills, editing skills, and technical skills involved in computer desktop publishing.

Fluid Power (FLP)

FLP 111. Fluid Power Fundamentals .....4 credit hours

Prerequisite: None
45 lecture - 30 lab 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. (Hydraulics is used as a means of teaching the fundamentals.) Directional valves, pressure control valves, flow control valves, 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 I.....1-3 credit hours

Prerequisite: first semester courses, consent
Fulfills core elements: None

See the description for all co-op courses at the beginning of these course descriptions

FLP 213. Hydraulic Controls .....3 credit hours

Prerequisite: FLP 111
30 lecture - 30 lab 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 takes a closer look at the directional, pressure and flow controls studied in FLP 111. The concentration is on specialty type valves such as stack modules, cartridge valves, pressure and flow control. Electric components used in ladder logic sequencing of hydraulic actuators also are studied. Lab time is an integral part of this course. It is recommended that students enroll in FLP 214 at the same time as this course.

FLP 214. Basic Hydraulic Circuits .....3 credit hours

Prerequisite: FLP 111
30 lecture - 30 lab hours
Fulfills core elements: 5,7,8,9,18,19

This course parallels FLP 213 and deals with circuits as the application of hydraulic controls. Circuit design, application and troubleshooting are major topics studied. Electric logic for hydraulic sequencing is included. Lab time is an important part of this course. It is recommended that students enroll in FLP 213 at the same time as this course.

FLP 225. Fluid Power Instrumentation.....3 credit hours
Prerequisites: FLP 213 and FLP 214
30 lecture - 30 lab hours
Fulfills core elements: 5,7,8,18,19

This course includes the study of electronic instrumentation as it applies to hydraulics and an introduction to automatic control. Discussion and laboratory exercises involve sensors of all types, oscilloscopes, and X/Y recorders. Characteristics of various pressure controls and electro-hydraulic valves are studied utilizing this equipment. The course concludes with an introduction to feedback control theory.

FLP 226. Pneumatics.....3 credit hours
Prerequisite: None
30 lecture - 30 lab hours
Fulfills core elements: 5,18,19

Basic air systems are studied as a control medium in industrial applications such as presses, clamps, transfer devices, etc. Valves, cylinders, motors, compressors, regulators, filters and other power components are included. Ladder logic provides a means of circuit design on an introductory level.

FLP 274. FLP Co-op II.....1-3 credit hours
Prerequisite: FLP 174, consent
Fulfills core elements: None

See the description for all co-op courses at the beginning of these course descriptions

French (FRN)

FRN 111. First Year French I.....4 credit hours
Prerequisite: None
45 lecture - 15 lab 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 120. Beginning Conversational French .2 credit hours
Prerequisite: None
30 lecture 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 college French studies or students already enrolled in the first year course.

FRN 121. Intermediate Conversational French .....2 credit hours
Prerequisite: FRN 120 or one semester of college French or Consent
30 lecture 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 college language requirements.

FRN 122. First Year French II .....4 credit hours
Prerequisite: FRN 111
60 lecture 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 culture.

FRN 213. Second Year French I .....3 credit hours
Prerequisite: FRN 122 or consent
45 lecture 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.

FRN 224. Second Year French II.....3 credit hours
Prerequisite: FRN 213 or consent
45 lecture 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.

Geography (GEO)

GEO 100. World Regional Geography.....3 credit hours
Prerequisite: None
45 lecture hours
Fulfills core elements: 17,20,24

This course surveys the world on a region-by-region basis identifying the specific geographic characteristics such as climate, terrain, population, industry, trade, transportation and agriculture which give the individual regions their unique identity.

GEO 103. Cultural Geography .....3 credit hours
Prerequisite: None
45 lecture hours
Fulfills core elements: 24

This course examines the world-wide patterns and character 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 United States and Canada .....3 credit hours
Prerequisites: None
45 lecture hours
Fulfills core elements: 17,20,23

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)

Geology (GLG)

GLG 100. Introduction to Earth Science .....4 credit hours

Prerequisite: None
Corequisite: GLG 100L
30 lecture - 45 lab 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.

GLG 103. Field Geology .....3 credit hours

Prerequisite: None
45 lecture 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.

GLG 104. Weather.....3 credit hours

Prerequisite: None
22.5 lecture - 22.5 lab 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 credit hours

Prerequisite: None
45 lecture 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 students interested in becoming school teachers, or needing a science elective.

GLG 110. Geology of the National Parks and Monuments .....2 credit hours

Prerequisite: None
30 lecture hours
Fulfills core elements: 2,5,17

The geological settings of specific National Parks and Monuments is studied including the principles and processes which shaped them. Slide programs and maps are used to illustrate the geological features.

GLG 114. Physical Geology.....4 credit hours

Prerequisite: None
Corequisite: GLG 114L
30 lecture - 45 lab 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 credit hours

Prerequisite: GLG 100
30 lecture - 45 lab hours
Fulfills core elements: 7,15,17

The development of North America as a typical continent is presented including the formation of mountains, plains, 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.

GLG 202. Earth Science for Elementary Teachers .....4 credit hours

Prerequisite: None
30 lecture - 45 lab 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.

German (GRM)

GRM 111. First Year German I .....4 credit hours

Prerequisite: None
60 lecture 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 120. Conversational German .....2 credit hours

Prerequisite: None
30 lecture 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 120 may be taken as a preview for students entering the first year German studies or students already enrolled in the first year course.

GRM 121. Intermediate Conversational German .....2 credit hours

Prerequisite: GRM 120 or consent
30 lecture hours
Fulfills core elements: 13,14,24

This course is a continuation of GRM 120, 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.

GRM 122. First Year German II .....4 credit hours

Prerequisite: GRM 111 or consent
45 lecture - 15 lab 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.

Graphic Design Technology (GDT)

GDT 100. Typography I .....4 credit hours

Prerequisite: None
30 lecture - 60 lab 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.

GDT 101. Design Survey .....3 credit hours

Prerequisite: None
45 lecture hours
Fulfills core elements: 7,13,20

This course surveys historical and contemporary styles and influences in graphic design through the ages.

GDT 103. Perspective Drawing .....4 credit hours

Prerequisite: None
30 lecture - 60 lab hours
Fulfills core elements: 7

Students gain traditional drawing skills, quick sketching, and 3D computer software help develop the concepts of perspective 3 dimensional visualization for illustrators and designs. Comparative techniques of perspective drawing and shadow construction will be explored using traditional tools and Macintosh computers. This course is required for Illustration Majors and a recommended approved elective for Design Majors. Students will purchase basic set of drawing tools and a computer disk.

GDT 105. Introduction to Mac Graphics .....3 credit hours

Prerequisite: none
45 lecture - 15 lab 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 laboratory setting 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 .....4 credit hours

Prerequisite: GDT 137, GDT 138
30 lecture - 60 lab 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 connmunication theories.

GDT 117. Introduction to PageMaker .....2 credit hours

Prerequisite: Basic Macintosh/computer proficiency or GDT 105
30 lecture 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 an execute tutorial exercises and industry related projects. This course is a program requirement for the GDT-Design, Illustration and Digital PrePress programs.

GDT 118. Advanced PageMaker.....2 credit hours

Prerequisite: GDT 117 or consent
30 lecture hours
Fulfills core elements: 11

This course is a continuation of skill building in using the page layout software PageMaker™. 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 GDT-Design, Illustration and Digital PrePress programs.

GDT 125. Introduction to QuarkXPress™ .....2 credit hours

Prerequisite: Basic Macintosh Proficiency, or GDT 105
30 lecture 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 and Digital PrePress programs.

GDT 126. Advanced QuarkXPress™ .....2 credit hours

Prerequisite: GDT 125
30 lecture 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 in the GDT-Design and Digital PrePress programs.

GDT 137. Introduction to Illustrator .....2 credit hours

Prerequisite: Basic Macintosh literacy, GDT 105
30 lecture 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, GDT-Illustration and Digital Prepress programs.

GDT 138. Advanced Illustrator.....2 credit hours

Prerequisite: GDT 137 or consent
30 lecture hours
Fulfills core elements: 11

This course is an 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, GDT-Illustration, and Digital PrePress programs.

GDT 141. Introduction to Photoshop .....2 credit hours

Prerequisite: Basic Macintosh proficiency or GDT 105
30 lecture hours
Fulfills core elements: 11,18

This course 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, GDT-Illustration an Digital Prepress programs.

GDT 142. Intermediate Photoshop .....2 credit hours

Prerequisite: GDT 141 or consent
30 lecture 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 raster imaging projects. This course is a requirement in the GDT-Design, GDT-Illustration and Digital Prepress programs.

GDT 174. GDT Co-op I .....1-3 credit hours

Prerequisite: First semester courses, consent
Fulfills core elements: None

See the description for all co-op courses at the beginning of these course descriptions

GDT 200. Design and Publishing on the Internet .....4 credit hours

Prerequisite: GDT 138 and GDT 142 or PHO 127
45 lecture - 45 lab hours
Fulfills core elements: 7,11

This course is an exploration into publishing, focusing on the Internet as a tool for communication through page and site design. Emphasis is placed on web site layout/organization techniques for industry related assignments using various software applications on the Macintosh computer.

GDT 201. Graphic Illustration .....4 credit hours

Prerequisite: GDT 103 or consent
30 lecture - 60 lab hours
Fulfills core elements: 7

Traditional drawing methods and materials using a variety of media, help communicate a visual concept. The use of computers and software helps develop the concepts of 3 dimensional visualization for illustrators and designers. Computer models and physical scale models are created. A computer generated walk-through animation is part of the coursework that utilizes Macintosh computers and software. This course is required for illustration Majors and is a recommended approved elective for Design Majors. Students will need to purchase art supplies and a computer disk.

GDT 215. Typography II .....4 credit hours

Prerequisite: GDT 100 or Consent
30 lecture - 60 lab hours
Fulfills core elements: 5,7,8,11,18

This course is a continued study into the principles of typography with greater concentration on typographic composition, expressive form, computer applications, and visual communication systems. This course is required for GDT - Design option majors.

GDT 220. Publication Design .....4 credit hours

Prerequisite: GDT 118, & GDT 126
45 lecture - 45 lab 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 credit hours

Prerequisite: GDT 103 or consent
30 lecture - 60 lab 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 Illustration Majors and is a recommended approved elective for Design Majors. Students provide supplies and computer disk.

GDT 228. Airbrush.....4 credit hours

Prerequisite: GDT 222 or consent
30 lecture - 60 lab hours
Fulfills core elements: 7

Traditional airbrush method and 3D computer illustration software provide students with the basics used by professional illustrators and designers. Comparative techniques of rendering projects will be explored using traditional airbrushes, tools and Macintosh computers. Emphasis will be placed on developing a strong portfolio. This course is required for Illustration Majors and is a recommended approved elective for Design Majors. Students will provide airbrush, supplies and computer disk.

GDT 230. Professional Practices.....2 credit hours

Prerequisite: 32 credits of GDT Program Courses or consent
30 lecture - 30 lab hours
Fulfills core elements: 1,13

This class provides an overview of various professional design operations, career options, media services, freelancing, resume and portfolio preparation/presentation procedures. Lectures also touch on the fundamentals for operating a small design office.

GDT 233. Print Estimating .....2 credit hours

Prerequisite: none
30 lecture hours
Fulfills core elements: 5

This is a course in cost estimating and production planning for the Graphic Design Technology Program. Topics include estimating the price of printed materials before manufacture, hourly cost estimation, determining production standards and optimum operating sequence for various types of printing.

GDT 234. Planning and Finishing for Printing .....2 credit hours

Prerequisite: None
30 lecture hours
Fulfills core elements: 7,18,19

This course prepares students for the planning of printed material, with an emphasis on impositioning and assembly as it relates to all binding and finishing operations. This course is required for GDT Printing Technology Option students.

GDT 236. Specialized Study .....2-4 credit hours

Prerequisite: consent
Fulfills core elements: None

This class provides an opportunity for independent study in a particular area of instruction with faculty supervision. This is a course requirement for GDT Design, Illustration and Printing option majors.

GDT 239. Imaging and Illustration .....4 credit hours

Prerequisite: GDT 138, GDT 142
45 lecture - 45 lab 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, editorial and promotional illustrations. This is a required course for GDT-design and Illustration majors.

GDT 243. 3D Computer Illustrated Rendering .....4 credit hours

Prerequisite: GDT 105 or Mac proficiency
45 lecture - 45 lab hours
Fulfills core elements: 11,12

Using Macintosh computers, students sketch in 3D space on 3D surfaces. This course introduces Freeform-Wireframe illustration and design. Students explore the rendering of objects with lighting, shadows, reflections and backgrounds to achieve photo realistic images. This course is required for illustration majors and is an approved elective for design majors.

GDT 245. Computer-Aided Printing .....4 credit hours

Prerequisite: GDT 105 or Mac proficiency
45 lecture - 45 lab 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.

GDT 246. Introduction to Multimedia .....4 credit hours

Prerequisite: GDT 138, GDT 142
45 lecture - 45 lab hours
Fulfills core elements: 7, 11, 18

This course is an exploration into the design and creation of multimedia presentation using Macromedia Director. Emphasis is placed on developing digital animation and interactive CD-ROM for marketing presentations, personal expession, and short movies. Created directly on the computer, the multimedia presentations are prepared for projectors, video, the internet, or CD-ROM, by incorporating animation with sound and movies. This course is an approved elective for Graphic Design Technology Majors.

GDT 252. Advanced Digital Studio .....3 credit hours

Prerequisite: GDT 126, GDT 138 and GDT 142 or Consent
37.5 lecture - 30 lab hours
Fulfills core elements: 11,12,13,19

This course offers advanced techniques and applications in computer based imaging and publication design. Topic 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.

GDT 274. GDT Co-op II .....1-3 credit hours

Prerequisite: GDT 174 and Consent
Fulfills core elements: None

See the description for all co-op courses at the beginning of these course descriptions

Health Science (HSC)

HSC 100. Nursing Assistant Skills.....4 credit hour

Prerequisite: Consent, minimum age of 17
Corequisite: HSC 100L
38 lecture hours, 22 lab hours, 30 clinical hours
Fulfills core elements: none

This course prepares students for employment in a hospital, long-term care facility or home care, as a Nursing Assistant, using classroom, laboratory and clinical methods for learning basic nursing skills.

HSC 101. Healthcare Terminology .....1 credit hour

Prerequisite: None
15 lecture 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 113. Introduction to Medical Science ..2 credit hours

Prerequisite: High School reading ability
30 lecture hours
Fulfills core elements: none

This course provides an overview of the health profession, how and why diseases occur, an overview of various health problems, and an awareness of monitoring vital signs. The course content may vary according to student interest. and laboratory availability.

HSC 115. Medical Office and Laboratory Procedures.....3 credit hours

Prerequisite: HSC 113 or equivalent
37.5 lecture - 22.5 lab 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 118. General Nutrition.....2 credit hours

Prerequisite: None
30 lecture hours
Fulfills core elements: 7,8,10,16

This course presents normal nutrition and its relationship to health. It includes a study of the nutrients and nutrition planning guides. It covers energy balance and nutritional needs for physical activity. Nutritional needs throughout the life cycle are studied. Other topics covered include: food safety, food technology and cultural aspects of nutrition. The course meets the Nursing Program requirements and is appropriate for the general student population.

HSC 128. Therapeutic Nutrition.....1 credit hour

Prerequisite: first 2 semester courses; HSC 118 and consent; or LPN and consent
15 lecture 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.

HSC 131. CPR/FPR and First Aid.....1 credit hour

Prerequisite: None
15 lecture 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.

HSC 131A. Community CPR..... ½ credit hour

Prerequisite: None
7.5 lecture hours
Fulfills core elements: 7,16

This course prepares students to perform adult, child, and infant cardiopulmonary resuscitation (CPR). Information about preventing injury and illness is provided. Students also learn basic care for illness or injury until professional help arrives. Course objectives follow American Red Cross guidelines, and successful students earn the ARC Community CPR card.

HSC 131B. CPR/FPR Review..... ½ credit hour

Prerequisite: Current CPR/FPR card ('93 guidelines)
7.5 lecture 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).

HSC 147. Growth and Development.....4 credit hours

Prerequisite: ENG 100 or ENG 111
60 lecture 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 also is appropriate for the general student population. This course transfers to four-year institutions.

HSC 174. HSC Co-op I.....1-3 credit hours

Prerequisite: Consent
Fulfills core elements: None

See the description for all co-op courses at the beginning of these course descriptions

HSC 220. Pathophysiology .....4 credit hours

Prerequisite: BIO 111, LPN, RN or consent
60 lecture 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.

HSC 244. Health Care Ethics.....2 credit hours

Prerequisite: consent
30 lecture hours
Fulfills core elements: 1,2,7,8,9,10,14

Various philosophies of ethics (Kantian, utilitarian, natural law, Ross, Rawls) are introduced. Models for decision making using a multifaceted approach and incorporating philosophy, values clarification, and legal aspects are used to examine current ethical issues. Among topics discussed are patient rights, confidentiality, informed consent, abortion, genetic manipulation, experimental procedures, treatment of impaired newborns, euthanasia, and AIDS.

Heating (HTG)

HTG 100A. Boiler Operations I.....3 credit hours

Prerequisite: Employment with boilers or consent
45 lecture hours
Fulfills core elements: None

Boiler terminology, construction and function, fundamental application of physics, heat, steam, water, and pressures are studied. Safety instruction is included for low pressure applications.

HTG 100B. Boiler Operations II .....3 credit hours

Prerequisite: HTG 100A, or consent
45 lecture hours
Fulfills core elements: None

This course is a continuation of HTG 100A and covers high pressure boilers and environmental problems. It also covers in greater depth physics, heat, water treatment, steam, and use of fossil fuels and atomic energy.

HTG 101. Boiler Accessories.....3 credit hours

Prerequisite: HTG 100B or consent
45 lecture hours
Fulfills core elements: None

This course covers all boiler accessories; their use, design, requirements, operation and care. Also, the study of combustion equipment is continued.

HTG 102. Boiler Auxiliaries.....3 credit hours

Prerequisite: HTG 101 or consent
45 lecture hours
Fulfills core elements: None

This course provides continuing study of accessories and auxiliaries including injectors, feedwater heaters, deaerators and evaporators, economizers, air preheaters, and cooling towers, and fluid bed boilers.

HTG 103. Power Plant Engine and Turbines .....3 credit hours

Prerequisite: HTG 102 or consent
45 lecture hours
Fulfills core elements: None

Principles of operation and maintenance practices of steam condensing and non-condensing engines and turbines are presented. Also included are construction, mechanisms, engine indicators, governors, engine rating and efficiency, gas turbines, and waste heat boilers.

HTG 104. Power Plant Refrigeration .....3 credit hours

Prerequisite: consent
45 lecture hours
Fulfills core elements: None

The basic physical principles underlying refrigerants and refrigeration cycles are studied. Students are introduced to detailed physical descriptions of refrigeration equipment with emphasis on the part each piece plays in a refrigeration compression cycle.

HTG 105. Power Plant Air Conditioning Systems .....3 credit hours

Prerequisite: HTG 104
45 lecture hours
Fulfills core elements: None

This course is a continuation of the study of refrigeration systems used in power plants and industry. Topics studied include the characteristics of large refrigeration equipment, cooling towers, compressors, industrial air conditioning, codes, and safety.

HTG 106. Power Plant Electricity I .....3 credit hours

Prerequisite: Employed operating boilers or consent
45 lecture hours
Fulfills core elements: None

This class introduces operators to basic electricity and the basic application of electrical measuring instruments including basic terms, volts, ohms, amps, power factors, AC and DC principles, single and 3-phase circuits, motor protectors (fuses, heaters, breakers) sub-stations, and transformers.

HTG 107. Power Plant Electricity II.....3 credit hours

Prerequisite: HTG 106 or consent
45 lecture hours
Fulfills core elements: None

This course is a continuation of HTG 106. It studies types of motors and generators employed in power plants to generate electricity. It also looks at the application and maintenance of motors, induction, synchronous, single and 3 phase; power transmission, transformer lines, breakers, start and run capacitors, and control of plant power factors. Safety and appropriate codes are discussed.

HTG 109. Review for Boiler/Refrigeration Examination .....3 credit hours

Prerequisite: Employed operating boilers or consent
45 lecture hours
Fulfills core elements: None

This course reviews major units of boiler operations and refrigeration to prepare candidates for passing licensing examinations. Students may prepare for low pressure, high pressure, third class, second class, first class, steam and/or refrigeration licensing. The course will be tailored to the license desired.

Note: HTG 111 through HTG 215 are primarily trade-related instruction program courses. Their purpose is to upgrade persons currently employed in the industry; however, students who are not currently employed in the industry are welcome. Membership in the Refrigeration Service Engineers Society (RSES) is required. Consent of advisor is required for registration.

HTG 111. Heating Fundamentals.....3 credit hours

Prerequisite: Refrigeration Service Engineers Society (RSES) membership required
45 lecture - 30 lab hours
Fulfills core elements: None

This is the first in a series of courses introducing heating and air conditioning service personnel to the fundamentals of heating fuels, heating equipment and systems.

HTG 122. Heating Systems .....3 credit hours

Prerequisite: HTG 111 or consent and Refrigeration Service Engineers Society (RSES) membership
75 lecture hours
Fulfills core elements: None

Building upon HTG 111, this course covers applications, installation and start-up of heating equipment: oil, gas, electric warm air and hydronic.

HTG 174. HTG Co-op I.....1-3 credit hours

Prerequisite: Consent
Fulfills core elements: None

See the description for all co-op courses at the beginning of these course descriptions

HTG 213. Heating Controls .....3 credit hours

Prerequisite: HTG 122 and consent
45 lecture - 30 lab hours
Fulfills core elements: None

This course focuses on controls and troubleshooting heating equipment and systems.

HTG 228. Pneumatic Temperature Controls..2 credit hours

Prerequisite: None
30 lecture hours
Fulfills core elements: None

This class develops an understanding of the installation, maintenance and function of pneumatic temperature control systems. It covers pneumatic controls, applications and functions, plus air compressors and maintenance, variation of applied control system, room stat., master stat., damper motors, automatic water and steam valves, return and fresh air damper blades.

HTG 274. HTG Co-op II .....1-3 credit hours

Prerequisite: HTG 174, consent
Fulfills core elements: None

See the description for all co-op courses at the beginning of these course descriptions

History (HST)

HST 121. Western Civilization .....3 credit hours
Prerequisite: None
45 lecture 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. May also be taught as a telecourse.

HST 122. Western Civilization: The Early Modern World: 1300 - 1815 .....3 credit hours
Prerequisite: None
45 lecture 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. Western Civilization: Modern World: 1815 - Present .....3 credit hours
Prerequisite: None
45 lecture hours
Fulfills core elements: 3,7,13,20,21,24
This course covers the development, evolution, and expansion of Western institutions, ideas, and values from the Congress of Vienna in 1815 through the nineteenth and twentieth centuries to the present.

HST 150. African American History.....3 credit hours
Prerequisite: None
45 lecture 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 160. American Film .....3 credit hours
Prerequisite: None
45 lecture 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.

HST 200. Michigan History.....3 credit hours
Prerequisite: None
45 lecture hours
Fulfills core elements: 7,14,22,23
This course focuses on the history of the State of Michigan, including its geographical, economic, social, and political development. Particular emphasis is placed on the state's industrial growth, especially the automobile industry and the rise of industrial unions. More emphasis is placed on events and personalities in the 20th century.

HST 201. United States History to 1877 .....3 credit hours
Prerequisite: None
45 lecture hours
Fulfills core elements: 7,22,23
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. This course is also taught as a television course using the program series "The American Adventure."

HST 202. United States History Since 1877 .....3 credit hours
Honors section also offered
Prerequisite: None
45 lecture hours
Fulfills core elements: 7,22,23,24
Also offered as HST 202H (Honors course)
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 credit hours
Prerequisite: None
45 lecture hours
Fulfills core elements: 23,24
This course traces the history of U.S. foreign relations from the late colonial period to the present. It focuses on major events and the roles played by prominent figures. Emphasis is placed on the twentieth century.

HST 216. U.S. Military History, Colonial Times to the Present .....3 credit hours
Prerequisite: None
45 lecture 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."

Hotel-Restaurant Management (HRM)

HRM 104. Front Office Procedures .....3 credit hours

Prerequisite: None
45 lecture hours
Fulfills core elements: 1,6,7,9

The class provides an introduction to a systematic approach to front office operations as well as an overview of the flow of business through the hotel organization. Students complete exercises using front office simulation disks within the computer lab. Official certificate of completion is available from the American Hotel/Motel Association for those students who successfully pass the required exam.

HRM 174. HRM Co-op I .....1-3 credit hours

Prerequisite: 30 program hours and consent
Fulfills core elements: None

See the description for all co-op courses at the beginning of these course descriptions

HRM 222. Lodging Marketing and Promotion .....3 credit hours

Prerequisite: None
45 lecture hours
Fulfills core elements: 7

This course is designed to zero in on both hotel and restaurant marketing. A special emphasis is placed on sales and promotion of the hotel operation dealing with related activities such as banquet sales, convention planning and holiday packages. Official certificate of completion is available from the American Hotel/Motel Association for those students who successfully pass the required exam.

Human Services Worker (HSW)

HSW 100. Introduction to Human Services...3 credit hours

Prerequisites: None
45 lecture 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 200. Introduction To Interviewing and Assessment Techniques.....3 credit hours

Prerequisites: HSW 100
45 lecture 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.

HSW 210. Behavior Modification .....3 credit hours

Prerequisite: HSW 100 or PSY 100
45 lecture 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 and problems with aging or daily living. Students will learn to conduct psychosocial rehabilitation and psychoeducational groups.

HSW 220. Helping Approaches for Groups ...3 credit hours

Prerequisite: HSW 100 and 200 or permission of instructor
45 lecture hours
Fulfills core elements: 7,8,9,21

This course introduces the beginning helper to groupwork practice. Students learn how to screen candidates for groups, prepare potential members to use groupwork productively, use basic groupwork technique, attend to group process, and use particular activities and techniques to achieve desired outcomes. Evaluation of groupwork effectiveness is also studied.

HSW 230. Field Internship and Seminar I....3 credit hours

Prerequisite: HSW 100, 200, permission of instructor and GPA of 2.00 in all HSW courses
15 lecture - 180 clinical hours
Fulfills core elements: None

This course integrates students into the working world by having them complete field work in a human service agency. The student will have the opportunity to progress from observation, to directly supervised client, to indirectly supervised client contact. The field work will be integrated with course work during a one hour per week seminar. Learning objectives will be individualized according to the field internship and career goals of each student.

HSW 232. Field Internship and Seminar II....3 credit hours

Prerequisite: HSW 100, 200, and 230, permission of instructor and 2.0 GPA in all HSW courses
180 experiential 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 have the opportunity to progress from observation to directly supervised client contact, to indirectly supervised client contact. The field work is integrated with course work during a one hours per week seminar. Learning objectives are individualized according to the field internship and career goals of each student.

Humanities (HUM)

HUM 101. Humanities I-Ancient to Medieval Times.....3 credit hours

Prerequisite: None
45 lecture hours
Fulfills core elements: 7,13,14

This course explores the humanities considering the creative nature of humanity. It focuses on art, literature, music philosophy, human thought and people's relationship to their culture. From ancient times to the end of the high middle ages.

HUM 102. Humanities II-Renaissance to Modern Times.....3 credit hours

Prerequisite: None
45 lecture hours
Fulfills core elements: 7,13,14

This course explores the humanities considering the creative nature of humanity. It focuses on art, literature, music, philosophy, human thought and people's relationship to their culture from the Renaissance to current times.

HUM 140. Special Topics .....3 credit hours

Prerequisite: None
45 lecture 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 credit hours

Prerequisite: None
45 lecture hours
Fulfills core elements: 7, 14, 21, 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 150. International Cinema .....3 credit hours

Prerequisite: None
45 lecture 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 credit hours

Prerequisite: None
45 lecture 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. WCC in Montreal .....2 credit hours

Prerequisite: None
30 lecture 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 accomodations in Montreal, passes to ten Festival films and the Festival program guide. Orientation sessions are held both on campus and in Montreal.

HUM 180. Film Analysis.....3 credit hours

Prerequisite: None
45 lecture hours
Fulfills core elements: 7,13,14,20

This course is designed to help students become more literate observers of film primarily through the study of the moving image. It is intended to give students the background necessary to understand how films communicate using a complex network of languages. It is not designed to teach viewers how to respond, but rather to suggest why people respond the way they do.

Industrial Drafting (IND)

IND 100. Technical Drawing.....4 credit hours

Prerequisite: None
30 lecture - 60 lab hours
Fulfills core elements: 7,8,9

An introduction to the graphic language and the use of drafting materials and instruments. Drawings include geometry, orthographic views, auxiliary views, section views, pictorial drawings and developments, electrical block diagrams, logic diagrams and schematics.

IND 105. Pictorial Drawing .....2 credit hours

Prerequisite: IND 100 or equivalent
15 lecture - 30 lab hours
Fulfills core elements: 7

The development of perspective and isometric drawings suitable for engineering studies, parts catalogs, and assembly and service manuals is the focus of this course. Emphasis is on rapid methods of drawing development using typical manufactured parts as subjects.

IND 107. Mechanisms .....4 credit hours

Prerequisite: IND 100,MTH 151,MTH 152, or MTH 177
15 lecture - 45 lab hours
Fulfills core elements: 7

Principles of gears, cams, pulleys and other mechanical means to transmit motion and energy are studied. Included are graphic and mathematical techniques to solve force, displacement and motion application problems.

IND 108. Industrial Blueprint Reading.....3 credit hours

Prerequisite: None
45 lecture hours
Fulfills core elements: None

This course takes a comprehensive look at all engineering drawings (blueprints) used in an industrial setting. The student is exposed to engineering drawings that are used in the machine and building trades. Specific blueprints included in the course are: machine drawings, sheet metal layouts, building floor plans, hydraulic and pneumatic schematics, plumbing and pipefitting drawings, welding and fabrication drawings, electrical diagrams and drawings, and air conditioning and refrigeration drawing sets.

IND 111. Industrial Drafting I .....4 credit hours

Prerequisite: IND 100 or 2 years of high school drafting
30 lecture - 60 lab hours
Fulfills core elements: 5,9,19

This course examines standard drafting/CADD 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 drafting materials and CADD for the preparation of assembly drawings, detail drawings, and parts lists for various manufacturing disciplines.

IND 112. Descriptive Geometry .....4 credit hours

Prerequisite: IND 100 or consent
30 lecture - 60 lab 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.

IND 114. Industrial Drafting II.....4 credit hours
Prerequisite: IND 111
30 lecture - 60 lab hours
Fulfills core elements: 5,7
Practices and procedures for creating assembly and detail drawings from given layouts using conventional drafting and CADD. An introduction to principles of design is included with emphasis on the use of standard parts catalogs.

IND 121. Theory of Jigs and Fixtures.....2 credit hours
Prerequisites: IND 100, MTT 111
15 lecture - 30 lab hours
Fulfills core elements: 4,5,6,7,8,9
The various types of jigs and fixtures and their combined use are studied. Development of skills in the proper location and clamping of a part is included, with emphasis on the application principles and presentation of a practical design. The use of standard parts catalogs is also covered.

IND 123. Geometric Dimensioning and Tolerancing.....3 credit hours
Prerequisite: IND 111 or equivalent
45 lecture hours
Fulfills core elements: 4,5,7,9
This course is an analysis of conventional and geometric dimensioning and tolerancing. Emphasis is placed upon definitions, terminology, and practical application of principles as they apply to typical industry problems.

IND 174. IND Co-op I .....1-3 credit hours
Prerequisite: Consent
Fulfills core elements: None
See the description for all co-op courses at the beginning of these course descriptions

IND 212. Theory of Dies.....2 credit hours
Prerequisite: Apprentice in Tool and Die Making or IND 111
15 lecture - 30 lab hours
Fulfills core elements: 7,8,9,19
The nomenclature and the basic types, principles and standards used in the design of dies are studied. Special attention is given to the use of standard parts catalogs and the standard die detailing and assembly drawing practices.

IND 216. Introduction to Computer-Aided Drafting.....2 credit hours
Prerequisite: IND 100 or equivalent
15 lecture - 45 lab hours
Fulfills core elements: 7,11,12
The principles and applications of computer-aided drafting systems and familiarity with the hardware components of the CAD system are emphasized. Use of the interactive graphic software, development of input and output skills, and familiarity with software, languages and systems hierarchy. AutoCAD software is featured.

IND 217. Introduction to 3-D CAD .....2 credit hours
Prerequisite: None
15 lecture - 45 lab hours
Fulfills core elements: None
Using CADKEY software the student is introduced to three axis creation of parts. The drafting of auxiliary views, details, assemblies and solid models are included.

IND 218A. Interactive Computer-Aided Drafting.....2 credit hours
Prerequisite: IND 216 or consent
15 lecture - 45 lab hours
Fulfills core elements: None
Advanced AutoCAD techniques and functions are introduced with special emphasis on 3-D and solid model development. Basic use of AutoLISP is also introduced.

IND 220. CAD Application - Electronic Simulation.....4 credit hours
Prerequisite: IND 251 or consent
45 lecture - 45 lab hours
Fulfills core elements: None
The course examines the principles of electronic layout including the application of CAD to develop block diagrams, electronic symbolization, component and hardware representations. Types of layout and assemblies are included.

IND 221. CAD Application - Mechanical .....4 credit hours
Prerequisite: IND 217
30 lecture - 60 lab hours
Fulfills core elements: 5,9,11
An introduction to the operation of a large CAD/D system. Emphasis is on startup, input, and output as applied to typical 2D and 3D drawings. Using the Prime Computervision CADDSTATION and Personal Designer Software, details and assemblies are generated from both 2D and 3D databases.

IND 222. Introduction to Electronic Design ..4 credit hours
Prerequisite: IND 220, or consent
45 lecture - 45 lab hours
Fulfills core elements: None
Emphasized are the design principles or laying out single and double sided printed circuit assemblies, wireless, and harness drawings for electronic unit interfacing.

IND 223. Introduction to Surfaces and Solids .....4 credit hours
Prerequisite: IND 221
30 lecture - 60 lab hours
Fulfills core elements: 4,5,7,9,11,12,18,19
3-D surfaces and solid models are created using advanced 3-D techniques. The course includes full color shading techniques to present an engineering model. Determining the mass properties of 3-D models and presenting the data in an engineering format is included.

IND 230. Advanced Product Drafting .....4 credit hours
Prerequisite: IND 216 or consent
30 lecture - 60 lab hours
Fulfills core elements: 7
Students study the development of a machine from concept design and layout stages to the preparation of working drawings. Emphasis is on preparation of a layout drawing incorporating a maximum of commercially available components, fastening techniques, use of standard and special methods, keeping maintenance of the machine as a design criteria.

IND 251. Fundamentals of Electronic Drafting.....2 credit hours

Prerequisite: ELE 111 or equivalent, ELE 137, IND 216
15 lecture - 45 lab 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: 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.

IND 274. IND Co-op II.....1-3 credit hours

Prerequisite: IND 174, consent
Fulfills core elements: None

See the description for all co-op courses at the beginning of these course descriptions

Industrial Technology (ITS)

ITS 100. Technology and Society.....2 credit hours

Prerequisite: MTH 038, MTH 039, ENG 091, ACS 070 or ASSET equivalent
30 lecture hours
Fulfills core elements: 18, 19, 20

This course is an introduction to the basic principles of technology. The emphasis of the course can be divided into three parts; nature of technology; methods used in studying technology, including cause and effect, models, simulations, and systems approaches; the interaction of society and technology. The purpose of the course is to create an opportunity to explore what technology is all about and how it affects our lives. The course is taught in the seminar format with experiential learning exercises, group projects, discussions and field trips.

Mathematics (MTH)

MTH 010. Arithmetic .....3 credit hours

Prerequisite: Special population student and permission of the instructor.
45 lecture 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 credit hours

Prerequisite: Special population students, MTH 010 or equivalent and permission of the instructor.
45 lecture 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 credit hours

Prerequisites: Special Population student, MTH 011 or equivalent and permission of the instructor.
45 lecture 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 credit hours

Prerequisites: Special Population students, MTH 011 or equivalent and permission of the instructor.
45 lecture 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 credit hours

Prerequisite: Special population students, MTH 011 or equivalent and permission of the instructor.
45 lecture 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 credit hours

Prerequisite: Special Populations student, MTH 011 or equivalent and permission of the instructor.
45 lecture 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 036. Math Anxiety .....1 credit hour

Prerequisite: None
15 lecture hours
Fulfills core elements: None

This course is designed for students who find themselves excluded from certain career choices because they are afraid to take math classes. Fear of mathematics is combated through the analysis of anxiety and the development of mathematical study skills. The course also explores the origin of math anxiety and gives help in reducing such anxiety and changing attitudes toward mathematics. This is a service course which may not be used as a substitute for a required mathematics course. Grading uses the satisfactory/unsatisfactory system.

MTH 038. Building Math Confidence .....1 credit hour

Prerequisite: None
15 lecture hours
Fulfills core elements: None

This course is designed to increase confidence levels in math-anxious people by providing instruction in problem solving techniques. Topics covered include calculator skills, story problem techniques, graphing, logic, and spatial relationships. Grading uses the satisfactory/unsatisfactory system.

MTH 039. Basic Mathematics .....3 credit hours

Prerequisite: None
45 lecture 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. Grading uses the satisfactory/unsatisfactory system.

MTH 054. Basic Math for Health Students.....3 credit hours

Prerequisite: None
45 lecture 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. The course is taught with a lecture mode of instruction. It is designed for students preparing for nursing and pharmacology courses.

MTH 062. Prealgebra.....3 credit hours

Prerequisite: MTH 039 or equivalent or consent
45 lecture hours
Fulfills core elements: None

Prealgebra is an arithmetic class with an emphasis on fractions and story problems combined with some elementary work in variables, signed numbers, graphing, and equations. Calculators will be used.

MTH 090. Occupational Mathematics .....3 credit hours

Prerequisite: MTH 062 or equivalent or consent
45 lecture 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 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 .....4 credit hours

Prerequisite: MTH 062 or MTH 090, or Equivalent or Consent
75 lecture 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 credit hours

Prerequisite: MTH 062 or MTH 090, or Equivalent or Consent
45 lecture 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 credit hours

Prerequisite: MTH 097A or placement test equivalent
45 lecture 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 116. Radiographic Calculations .....2 credit hours

Prerequisite: admission to Radiography or MTH 090
30 lecture hours
Fulfills core elements: 4,5,6,7

This is a specialized math course designed to review the mathematics needed by WCC radiographic students. The course includes the basic computational skills statistics and formulas needed by practicing radiologic technologists. Emphasis is given to mathematics of technique adjustments which require application of basic algebraic operations, conversion factors, ratio and proportion. Direct, inverse, and inverse-square proportions, the 15% Rule, and Reciprocity Law are covered.

MTH 148. Functional Math for Elementary School Teachers .....4 credit hours

Prerequisite: MTH 097
60 lecture hours
Fulfills core elements: 4,5,7,8,9

This course presents 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 on all subjects. Topics covered include problem solving, sets, whole numbers, integers, rational numbers, decimals, number theory, geometry, probability and statistics, and measurement. This course transfers to some four-year institutions.

MTH 151. Technical Algebra.....4 credit hours

Prerequisite: MTH 039 or placement test equivalent
75 lecture 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 usually offered in the self-paced format.

MTH 152. Technical Geometry and Trigonometry .....4 credit hours

Prerequisite: MTH 097 or MTH 151
60 lecture 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 credit hours

Prerequisite: MTH 097
60 lecture 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 scientific calculator is required for this course.

MTH 163. Business Mathematics.....3 credit hours

Prerequisite: MTH 039 or placement test equivalent
45 lecture 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, occasionally in the standard lecture format, and as a television course using the program series "By the Numbers."

MTH 165. Health Science Mathematics.....3 credit hours

Prerequisite: MTH 039 or placement test equivalent
45 lecture 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 169. Intermediate Algebra.....4 credit hours

Prerequisite: MTH 097 or placement test equivalent
60 lecture hours
Fulfills core elements: 4,5,6,7,8,9

The scope 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, nonlinear systems, systems of inequalities and determinates. 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. This course transfers to some four-year institutions.

MTH 169A. Intermediate Algebra (first half).3 credit hours

Prerequisite: MTH 097 or placement test equivalent
45 lecture 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 usually offered in the self-paced format. The combination of MTH 169A and MTH 169B transfers to some four-year institutions as MTH 169.

MTH 169B. Intermediate Algebra (second half) .....3 credit hours

Prerequisite: MTH 169A or placement test equivalent
45 lecture 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 nonlinear systems, systems of inequalities, and determinants. This course is usually offered in the self-paced format. The combination of MTH 169A and MTH 169B transfers to some four-year institutions as MTH 169.

MTH 177. Triangle Trigonometry .....3 credit hours

Prerequisite: MTH 097 or placement test equivalent
45 lecture 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 178. General Trigonometry .....3 credit hours

Prerequisite: MTH 169 or placement test equivalent
45 lecture 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 circular functions, graphs, inverse circular functions, trigonometric functions, solution of triangles and identities. This course transfers to many four-year institutions. (MTH 178 and MTH 179 may be taken concurrently. It is recommended that MTH 179 be taken first if the two are not taken concurrently.) A graphing calculator is required for this course. Consult the time schedule for current brand and model.

MTH 179. Precalculus.....4 credit hours

Prerequisite: MTH 169 or placement test equivalent
60 lecture hours
Fulfills core elements: 4,5,6,7,8,9

This course provides the necessary background in college-level algebra for calculus. Topics include set theory and set operations, relations and functions, manipulations of rational and non-rational functions, graphing, factoring, properties of exponents and logarithms, conic sections, sequences, binomial theorem, and mathematical induction. This course is currently offered only in the standard lecture format. It transfers to most four-year institutions. A graphing calculator is required for this course. Consult the time schedule for current brand and model.

MTH 181. Mathematical Analysis I.....4 credit hours

Prerequisite: MTH 169 or placement test equivalent
60 lecture 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: solutions to linear equations and inequalities, mathematics of finance, matrices, linear programming, sets, probability and statistics. 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 182. Mathematical Analysis II .....4 credit hours

Prerequisite: MTH 179 or 181
60 lecture 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 186. Applied Calculus I.....3 credit hours

Prerequisite: MTH 178 and 179 or Consent
45 lecture - 15 lab hours
Fulfills core elements: 4,5,6,7,9,11

This course is the first of a two-course sequence in applied calculus for engineering technology. An applications-oriented approach is given to topics including complex numbers, determinants and matrices, and differentiation and integration of algebraic and transcendental functions. There is a major emphasis on computer solutions solutions standard mathematical software and scientific graphing calculators.

MTH 191. Calculus I .....5 credit hours

Prerequisite: MTH 178 and 179
75 lecture hours
Fulfills core elements: 4,5,7,8,9

This is first-semester college calculus of one variable. Topics include limits, continuity, derivatives, applications of derivatives, elementary integration, and applications of integration. 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 192. Calculus II .....4 credit hours

Prerequisite: MTH 191
60 lecture 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. 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 197. Linear Algebra .....4 credit hours

Prerequisite: MTH 191. MTH 192 also recommended
60 lecture 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 286. Applied Calculus II.....3 credit hours

Prerequisite: MTH 186 or Consent
45 lecture - 15 lab hours
Fulfills core elements: 4,5,6,7,9,11

This course is the second of a two-course sequence in applied calculus for engineering technology. An applications-oriented approach is given to topics including: further topics on integration, an introduction to differential equations, Laplace transforms, Fourier series, numerical methods of solutions to integrals and differential equations, and a brief introduction to partial differential equations. There is a major emphasis on computer solutions using standard mathematical software and scientific graphing calculators.

MTH 293. Calculus III .....4 credit hours
Prerequisite: MTH 192
Corequisite: MTH 197
60 lecture 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. This course transfers to four-year institutions.

MTH 295. Differential Equations .....4 credit hours
Prerequisite: MTH 197 and 293
60 lecture 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. This course transfers to four-year institutions. A graphing calculator is required for this course. Consult the time schedule for current brand and model.

Machine Tool Technology (MTT)

MTT 100. Machine Shop Theory .....3 credit hours
Prerequisite: None
45 lecture hours
Fulfills core elements: 4,5,18,19
This class is designed to teach machine shop theory to those who have had or are presently receiving hands on or practical experience in the machining field. Precision and semi-precision measuring instruments, layout tools and procedures, proper use of hand tools, and the basic principles of machine tool operations are covered. Films supplement classroom instruction.

MTT 101. Blueprint Reading for Manufacturing .....3 credit hours
Prerequisite: None
45 lecture hours
Fulfills core elements: 5,7,18
Fundamentals of blueprint reading as applied to the manufacturing industry are studied. Basic drafting principles are studied as applied to specific problems. The class is designed for pre-engineers, draftsmen, machine operators, machine repairmen, inspectors, welders, and supervisors.

MTT 103. Introduction to Materials .....3 credit hours
Prerequisite: None
45 lecture 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 credit hours
Prerequisite: None
22.5 lecture - 67.5 lab hours
Fulfills core elements: 4,5,7,9,18,19
This beginning machine shop class is for those with little or no machine shop experience. Much emphasis is placed on safety. Precision and semi-precision measuring instruments, layout tools and procedures, reading drawings, and the proper use of hand tools are areas covered. Lab time is used to gain experience and learn basic operations on the five basic machine tools; drill press, saws, engine lathes, milling machines and grinders.

MTT 122. Machine Tool Operations and Set-Up I .....4 credit hours
Prerequisite: MTT 111 or consent
22.5 lecture - 67.5 lab hours
Fulfills core elements: 4,5,7,9,18,19
This is a machine shop class for those who have either completed the beginning level machine shop or have gained equivalent experiences elsewhere. Each of the five basic machine tools are studied in depth. The projects are designed to facilitate more advanced set-ups and operations so that the cutting of spur gears, multiple threads, tapers and internal grinding operations can be performed.

MTT 123. Machine Tool Operations and Set-Up II .....4 credit hours
Prerequisite: MTT 122 or Consent
90 lab hours
Fulfills core elements: 4,5,7,9,18,19
A continuation of MTT 122, this class is designed for mechanical technology students or for those who simply want to gain more machining experiences. Students experience new advanced operations on familiar machines along with new operations on entirely new machine tools, the new operations include spiral milling, taper grinding, and tracing techniques. New machine tools include the electrical discharge machine, optical comparater, turret lathe, and cutter grinder. Projects are designed to facilitate the completion of these operations and to gain experience on these machine tools.

MTT 174. MTT Co-op I .....1-3 credit hours
Prerequisite: MTT 111, MTT 122, consent.
Fulfills core elements: None
See the description for all co-op courses at the beginning of these course descriptions

MTT 201. Machine Tool Technology .....4 credit hours
Prerequisite: MTT 123 or Consent
90 lab hours
Fulfills core elements: 4,5,7,9,18,19
The last and most advanced machine shop class, this course emphasizes students' individual goals and proficiencies of specific machining operations. After completing the assigned projects, the students choose additional projects to manufacture using several advanced techniques to meet individual needs.

MTT 274. MTT Co-op II .....1-3 credit hours
Prerequisite: MTT 174, consent.
Fulfills core elements: None
See the description for all co-op courses at the beginning of these course descriptions

Mechanical Engineering Technology (MET)

MET 174. MET Co-op I .....1-3 credit hours
Prerequisite: First semester MET courses and consent.
Fulfills core elements: None
See the description for all co-op courses at the beginning of these course descriptions

MET 188. Introduction to Engineering Design.....3 credit hours
Prerequisite: enrolled in METT program or consent, IND 216 or IND 217
45 lecture - 45 lab 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. Included is a team-based design project, an introduction to the use of computer tools and lab techniques, and a survey of engineering disciplines involved with concurrent engineering projects.

MET 211. Statics and Introduction to Solid Mechanics .....3 credit hours
Prerequisite: MTH 191 or equivalent, MTT 103, IND 217
Pre or Corequisite: MTH 191 or equivalent
30 lecture - 60 lab 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 introduction to concepts of stress strain relationships and generalized Hooke's law.

MET 241. Introduction to Dynamics.....3 credit hours
Prerequisite: MET 211 or consent
30 lecture - 60 lab 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.

MET 260. Strength of Materials.....3 credit hours
Prerequisite: MET 241 or consent
30 lecture - 60 lab 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.

MET 274. MET Co-op II .....1-3 credit hours
Prerequisite: MET 174, consent
Fulfills core elements: None
See the description for all co-op courses at the beginning of these course descriptions

Music (MUS)

MUS 103. WCC Community Jazz Orchestra ....1 credit hour
Prerequisite: None
45 lab 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 hour
Prerequisite: None
30 lab hours
Fulfills core elements: 7,13
This is a basic performance skills class for instrumental and vocal solo or small group expression. Student 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 a basic competency on their instrument(s).

MUS 106. Jazz Combo .....1 credit hour
Prerequisite: None
30 lab hours
Fulfills core elements: 13
The Jazz Combo is designed for the musician with some degree of competency to gain experience and skill in performance and improvisation of different styles of jazz and blues. This is a performing group which offers concerts in the community.

MUS 135. Chorus .....1 credit hour
Prerequisite: None
30 lab hours
Fulfills core elements: 13
A course in performance covering traditional 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 hour
Prerequisite: None
30 lab 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. Basic Musicianship.....3 credit hours
Prerequisite: None
45 lecture 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.

MUS 142. Music Theory I.....3 credit hours

Prerequisite: None
45 lecture 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 class 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. Composition: Theory and Arrangement .....2 credit hours

Prerequisite: None
30 lecture 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.

MUS 146. Creative Improvisation: Songwriting .....3 credit hours

Prerequisite: None
45 lecture 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 credit hours

Prerequisite: None
30 lecture hours
Fulfills core elements: 7,22

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 credit hours

Prerequisite: None
30 lecture 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 credit hours

Prerequisite: None
30 lecture 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.

MUS 175. Audio Recording Technology I .....3 credit hours

Prerequisite: None
45 lecture 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 automated recording techniques and multitrack.

MUS 180. Music Appreciation.....3 credit hours

Prerequisite: None
45 lecture hours
Fulfills core elements: 7,13,14

This is an introduction to music, using innovative techniques on how to listen to music after becoming acquainted with the socio-cultural values of the people who produced the many kinds of music in our world. All music styles are covered. Presentations deal with the growth and development of musical forms and different styles through recordings and demonstrations.

MUS 183. Music and Culture of Africa and the African-American.....3 credit hours

Prerequisite: None
45 lecture hours
Fulfills core elements: 1,7,10,13,14

Afromusicology is a relatively new discipline of musical studies which combines the areas of Anthropology (Egyptology), Organology, World and Social History, and Musicology to explain the creative and artistic developments of Africa and Africa-American peoples of the world. The mode of presentation deals with an ethnomusicological approach, focusing on the lifestyle, traditions and mores to define the visual and musical arts.

MUS 204. Voice .....2 credit hours

Prerequisite: None
30 lab hours
Fulfills core elements: 13

This course is an extension of Introduction to Voice and is an in-depth study of vocal techniques.

MUS 206. Vocal Performance .....2 credit hours

Prerequisite: None
30 lab hours
Fulfills core elements: 13,14

Students learn techniques in performing songs. Community and public concerts are held. Sound system and recorded band tracks are used for accompaniment. Students may also accompany themselves.

MUS 210. Functional Piano .....2 credit hours

Prerequisite: None
30 lab hours
Fulfills core elements: 13

This piano class is aimed to give non-piano majors and those who just want to play the piano the ability to read keyboard music harmonically and melodically. The course covers piano technique fundamentals, basic musicianship, elementary keyboard harmony, sight reading, pedal technique, aids to memorization and keyboard application of subjects studied in music classes.

MUS 213. Intermediate Piano .....2 credit hours
Prerequisite: None
30 lab hours
Fulfills core elements: 13
A continuation of MUS 210, this course provides piano studies beyond the elementary or beginning stage. It is for those with some experience in piano playing.

MUS 216. Piano: Jazz and Blues .....2 credit hours
Prerequisite: None
30 lab hours
Fulfills core elements: 13
This piano course is designed to cover such styles as Blues and elementary jazz improvisation techniques. Music theory in terms of chord progression and improvisational techniques are part of the course of study.

MUS 225. Drums: Beginning Jazz/Rock .....2 credit hours
Prerequisite: None
30 lecture 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 credit hours
Prerequisite: None
30 lab 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 credit hours
Prerequisite: None
30 lab 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 credit hours
Prerequisite: None
30 lab hours
Fulfills core elements: 13
Designed to enable students to develop skills necessary to play the guitar in different jazz styles, this course includes improvisation work and chording. It requires basic guitar playing experience.

MUS 275. Audio Recording Technology II ....3 credit hours
Prerequisite: MUS 175
45 lecture 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 student a professional groups within the college or externally.

Natural Resources (NRS)

NRS 110. Seasonal D.N.R. Park Officer Training.....8 credit hours
Prerequisite: DNR employment
114 lecture - 12 lab hours
Fulfills core elements: None
A three week course for the DNR Seasonal Parks and Recreation Officers.

NRS 120. Department of Natural Resources Enforcement Officers Training .....11 credit hours
Prerequisite: DNR employment and selection
158 lecture - 34 lab hours
Fulfills core elements: None
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 designated for this training.

Numerical Control (NCT)

NCT 112. Introduction to CNC Machining ....3 credit hours
Corequisite: MTT 111
37.5 lecture - 37.5 lab hours
Fulfills core elements: 11, 18
This course develops proficiency in setup and operation of CNC Machining Centers and Turning Centers. Students master CNC controls through laboratory experiences and the manufacture of pre-programmed parts. Part processing, speeds and feed, fixturing and tool offsets are major topics discussed.

NCT 121. Manual Programming NC Tool.....4 credit hours
Prerequisite: ROB 111, MTH 151
Corequisite: NCT 112
45 lecture - 45 lab hours, plus open lab time
Fulfills core elements: 4,5,7,9,11,18,19
This is the first in a two-course study of manual programming of CNC milling and turning machines. Students experience the entire process of part manufacture by processing blueprints of sample parts, writing and editing of programs, set up and operation of the machine tool, inspection of finished product. 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.

NCT 122. Advanced Manual Programming and NCT Tool Operation.....4 credit hours
Prerequisite: NCT 121, MTH 152
45 lecture - 45 lab hours, plus open lab time
Fulfills core elements: 4,5,7,8,9,11,18,19
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, and laboratory time outside of class is required.

NCT 174. NCT Co-op I.....1-3 credit hours
Prerequisite: NCT 112, NCT 121, NCT 122, consent.
Fulfills core elements: None
See the description for all co-op courses at the beginning of these course descriptions

NCT 236. CAM Machine Tool Programming ..4 credit hours

Prerequisite: NCT 112 and 121
45 lecture - 45 lab hours (plus open lab time)
Fulfills core elements: 7,11

Students generate tool paths for milling and turning machines which are CNC controlled, using Computer Aided Manufacturing software. Part programs are constructed by defining the part geometry and then defining the tooling using a "PC" based CAM system. Tool path generation on CAD produced databases are included as part of the class activities. Program editing and transfer of part programs to the N/C machine tool from the CAM system are included. The machining operations are 2-D machining applications. Students are provided time outside class to use the CAM hardware and software to complete assignments.

NCT 247. Advanced CAM Machine Tool Programming .....4 credit hours

Prerequisites: NCT 236, IND 216
45 lecture - 45 lab hours, plus open lab time
Fulfills core elements: 9,11,12,18,19

This course is a continuation of NCT 236. Students are required to generate tool paths on parts containing complex geometry, and which are often considered to be problem situations in industry. Tool paths are generated on data-bases developed on separate CAD systems, which have been transferred to the CAM workstation. Students are required to select the proper order of machining operations, the tooling required, and work holding devices needed to complete the machining of parts assigned. Milling, turning, and plasma arc N/C machining applications are included. Students are provided time outside of class to use the CAM workstations in order to complete assignments.

Nursing (NUR)

Enrollment for these courses is granted to students admitted to this program. Courses must be taken in the sequence outlined in the curriculum unless consent is obtained from the nursing division after review of previous transcripts.

NUR 039. State Board Preparation .....1 credit hour

Prerequisite: Consent
15 lecture 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.

NUR 101. Introduction to Nursing .....1 credit hour

Prerequisite: Admission to the Nursing Sequence
15 lecture 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, an overview of nursing history with an emphasis on associate degree nursing, the Code of Ethics for Nurses, universal precautions, and basic legal issues.

NUR 102. Fundamentals of Nursing.....2 credit hours

Prerequisite: 1st semester courses
Corequisite: NUR 103
30 lecture 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 credit hours

Prerequisite: 1st semester courses, HSC 131 or equivalent
Corequisite: NUR 102
54 clinical - 81 lab 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.

NUR 104. Nursing of the Older Adult .....1 credit hour

Prerequisites: admission to the Nursing Program
Corequisite: NUR 105
15 lecture hours
Fulfills core elements: 10,16 (when taken with NUR 105)

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.

NUR 105. Nursing of the Older Adult - Clinical Practice .....1 credit hour

Prerequisites: admission to the Nursing Program, HSC 131 or equivalent
Corequisite: NUR 104
45 clinical hours
Fulfills core elements: 10,13,16 (when taken with NUR 104)

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.

NUR 111. Pharmacology I.....1 credit hour

Prerequisite: Consent of Nursing Department
15 lecture hours
Fulfills core elements: 4,5,7,9,11

Principles of pharmacology are introduced, including drug sources, preparations, classification and legislation. By the end of the course, students must demonstrate proficiency in calculating drug dosages. This course is the basis for continued learning of pharmacology in subsequent nursing courses.

NUR 112. Pharmacology II.....2 credit hours

Prerequisites: NUR 111 or equivalent
30 lecture hours
Fulfills core elements: 7,16

This course builds on principles and concepts learned in NUR 111, Pharmacology I. Students are provided with expanded information 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.

NUR 123. Acute Care Nursing I.....3 credit hours

Prerequisites: first and second semester courses
Corequisites: NUR 124
45 lecture 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 credit hours

Prerequisites: first and second semester courses
Corequisites: NUR 123
90 clinical 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 discussed.

NUR 131. Nursing of the Childbearing Family.....3 credit hours

Prerequisites: first and second semester courses
Corequisites: NUR 132
45 lecture hours
Fulfills core elements: 1,6,16

This course introduces basic nursing care of the family during the childbearing process, including antepartum, intrapartum, postpartum and normal newborn period. Topics of family structure and adaptation, fertility and infertility, and deviations from the normal maternity and newborn cycle will be addressed.

NUR 132. Nursing of the Childbearing Family - Clinical Practice.....2 credit hours

Prerequisites: first and second semester courses
Corequisites: NUR 131
90 clinical 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.

NUR 201. Transition for LPNs.....2 credit hours

Prerequisite: consent or LPN admitted to Advanced Standing Program
15 lecture - 45 lab 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 205. Introduction to Professional Nursing: Societal Dimensions.....3 credit hours

Prerequisite: None
Corequisites: BIO 237, PSY 100
45 lecture 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 examine the historical development of nursing and assess the impact of that development on contemporary nursing. Cultural variables and personal values are examined by students. Finally, the social context within which nursing is practiced is reviewed, providing students with an appreciation of the health care system, with particular emphasis on legal and ethical frameworks.

NUR 223. Acute Care Nursing II.....3 credit hours

Prerequisite: admission to Nursing Program, complete 3rd semester courses or complete 1st semester of Advanced Standing Program
Corequisites: NUR 224
45 lecture hours
Fulfills core elements: 5,7,8,9,16,18 (when taken with NUR 224)

This course builds on principles and skills learned in NUR 123: Acute Care Nursing I 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 credit hours

Prerequisite: admission to Nursing Program, complete 3rd semester courses or complete 1st semester of Advanced Standing Program
Corequisites: NUR 223
90 clinical hours
Fulfills core elements: 5,7,8,9,16,18 (when taken with NUR 223)

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.

NUR 231. Nursing of Children.....3 credit hours

Prerequisites: 4th semester courses
Corequisite: NUR 232
45 lecture 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 credit hours

Prerequisite: 4th semester courses
Corequisite: NUR 231
90 clinical 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. Opportunity for interaction with the well child in community settings also is provided.

NUR 255. Mental Health Nursing.....3 credit hours

Prerequisite: 3rd semester courses
Corequisite: NUR 256
45 lecture 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 credit hours

Prerequisite: 3rd semester courses
Corequisites: NUR 255
90 clinical 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.

NUR 261. Transition to Graduate Nurse Role .....1 credit hour

Prerequisite: 4th semester courses
Corequisite: NUR 262
15 lecture 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 and continuing education also is presented.

NUR 262. Transition to Graduate Nurse Role - Clinical Practice.....4 credit hours

Prerequisite: 4th semester courses
Corequisite: NUR 261
180 clinical 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 staff nurses and other members of the health team. Attendance at one continuing education program is required. An observation in an intensive care unit will be included.

Pharmacy Technology (PHT)

PHT 100. Introduction to Pharmacy and Health Care Systems.....4 credit hours

Prerequisite: Admission to Pharmacy Technician Program
Corequisite(s): PHT 101, PHT 103
60 lecture 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 credit hours

Prerequisite: Admissions to Pharmacy Technology Program
Corequisites: PHT 100, PHT 103
60 lecture 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 credit hours

Prerequisite: Admission to PHT program, MTH 097 or equiv
Corequisite: PHT 100, PHT 101
30 lecture 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 course work.

PHT 140. Pharmacy Prescription Processing.....2 credit hours

Prerequisites: PHT 100, 101 and 103
Corequisites: PHT 150, PHT 198
30 lecture 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 credit hours

Prerequisites: PHT 100, PHT 101, PHT 103
Corequisites: PHT 140, PHT 198
45 lecture 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 will include 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 I.....1-3 credit hours

Prerequisite: PHT 100,PHT 103
Fulfills core elements: None

See the description for all co-op courses at the beginning of these course descriptions

PHT 198. Pharmacy Experience .....4 credit hours

Prerequisite: PHT 100, PHT 101, PHT 103
Corequisite: PHT 140, PHT 150
360 clinical hours
Fulfills core elements: None

Skills and knowledge acquired in the first two semesters of the pharmacy technology program are applied in pharmacy practice setting. 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.

PHT 274. PHT Co-op II .....1-3 credit hours

Prerequisite: PHT 174
Fulfills core elements: None

See the description for all co-op courses at the beginning of these course descriptions

Philosophy (PHL)

PHL 101. Introduction to Philosophy .....3 credit hours

Prerequisite: None
45 lecture 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.

PHL 120. Philosophy of Work .....3 credit hours

Prerequisite: None
45 lecture 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 credit hours

Prerequisite: None
45 lecture 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 credit hours

Prerequisite: None
45 lecture 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 credit hours

Prerequisite: None
45 lecture hours
Fulfills core elements: 8,9,10,14,22

An introduction to the analysis of value behaviors is provided. The course deals with social values and aesthetic values. Some writing is required in which students give evidence of their increased capacity to make distinctions in these areas.

PHL 250. Logic.....3 credit hours

Prerequisite: None
45 lecture 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 credit hours
Prerequisite: None
45 lecture 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 credit hours
Prerequisite: None
30 lecture - 30 lab 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 credit hours
Prerequisite: None
45 lecture hours
Fulfills core elements: 7,13,14,20
This course studies 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 credit hours
Prerequisite: None
45 lecture - 45 lab hours
Fulfills core elements: 7,9,13
This is a first-term course in basic photography including darkroom work. Areas of study include: camera and meter usage, film, lighting and composition, laboratory equipment and procedures, chemical mixing and handling, black and white film and print processing, etc. Students must have an adjustable camera.

PHO 115. PHOTO RETOUCHING.....3 credit hours
Prerequisite: none
45 lecture - 15 lab hours
Fulfills core elements: None
In this course students explore manual and digital photographic retouching. Areas of investigation include black and white and color spotting, hand coloring, and digital photo restoration. Students will produce a variety of images including conventional darkroom printing of a digitally restored image.

PHO 116. Studio Portraits .....3 credit hours
Prerequisite: PHO 117
30 lecture - 30 lab
Fulfills core elements: 13
This course is the study of basic lighting and posing techniques used to create studio portraits. Areas of investigation include photographic equipment used in a portrait studio, traditional and non-traditional lighting techniques, and business concerns for portrait photographers.

PHO 117. Introduction to the Studio.....3 credit hours
Prerequisite or Corequisite: PHO 111
45 lecture - 15 lab hours
Fulfills core elements: None
This course provides a through introduction to photographic studio equipment and procedures. Through hands on exercises using 35mm color slide film, each student will learn a variety of artificial lighting techniques. Emphasis will be placed on the safe and effective handling of studio equipment. Students will be required to purchase a hand held light meter.

PHO 122. Photography II.....4 credit hours
Prerequisite: PHO 111
45 lecture - 45 lab 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 credit hours
Prerequisite: PHO 111
45 lecture - 45 lab hours
Fulfills core elements: None
This class provides a thorough exploration of color photography. Areas of investigation include color theory, color photographic materials and equipment, color film processing and color printing. Particular attention is paid to the ways in which photographers use color as a tool in a variety of photographic applications.

PHO 127. Digital Photo Imaging.....4 credit hours
Prerequisite: PHO 111
45 lecture - 45 lab hours
Fulfills core elements: 11,12,18,19
This course is a thorough introduction to digital photographic technology. Through the use of input devices, photo imaging software and output devices, students explore the world of the digital darkroom. Prior computer experience is recommended, but not required.

PHO 174. PHO Co-op I.....1-3 credit hours
Prerequisite: PHO 111
Fulfills core elements: None
See the description for all co-op courses at the beginning of these course descriptions

PHO 210. Alternative Processes .....3 credit hours
Prerequisite: PHO 122
45 lecture - 15 lab hours
Fulfills core elements: 9,13
This course is an investigation of alternative photographic processes currently in use by commercial and artistic photographers. Students employ a variety of non-traditional imaging methods 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.

PHO 211. Large Format Photography.....3 credit hours

Prerequisite: PHO 111
15 lecture - 45 lab 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 II.....3 credit hours

Prerequisite: PHO 211
15 lecture - 45 lab 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 credit hours

Prerequisite: PHO 111
15 lecture - 45 lab hours
Fulfills core elements: None

Through a variety of location shooting assignments students learn to photograph people outside the photographic studio. Techniques using natural and artificial lighting for portraiture on location are explored.

PHO 219. Photographic Design.....3 credit hours

Prerequisite: PHO 111
15 lecture - 45 lab 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. Commercial Product Photography .....3 credit hours

Prerequisite: PHO 117
30 lecture - 30 lab hours
Fulfills core elements: 7,8,9

A detailed study of the various types of cameras and their uses. This course emphasizes roll and sheet film cameras, as well as the more unusual applications of the medium format camera. Color film use is stressed.

PHO 225. Digital Studio Photography .....3 credit hours

Prerequisite: PHO 117, PHO 127
45 lecture - 15 lab hours
Fulfills core elements: 11,18,19

In this course students explore the digital realm of commercial photography. Emphasis is placed on the ways in which photographers working in traditional studio genres such as commerical product and portrait photography are now using digital photographic technologies. Class time will be split between the studio and the digital imaging lab. Areas of investigation include the use of digital cameras in the studio, advanced methods of digital manipulation and marketing considerations for digital studio photography.

PHO 227. Photojournalism .....3 credit hours

Prerequisite: PHO 111
45 lecture - 15 lab 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 230. Specialized Studies In Photography .....3 credit hours

Prerequisite: Consent
15 lecture - 45 lab hours
Fulfills core elements: 8

This course offers students the opportunity to work independently with faculty consultation in major areas of photography.

PHO 231. Portfolio Seminar .....4 credit hours

Prerequisite: PHO 122, 127, 211 or Consent
45 lecture - 45 lab 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.

PHO 274. PHO Co-op II.....1-3 credit hours

Prerequisite: PHO 174 and consent.
Fulfills core elements: None

See the description for all co-op courses at the beginning of these course descriptions

Physical Education Activities (PEA)

PEA 102. Cardiovascular Training.....1 credit hour

Prerequisite: None
30 lab hours
Fulfills core elements: None

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 and bicycle ergometers. Medical clearance is required for participation.

PEA 103. Beginning Golf .....1 credit hour

Prerequisite: None
30 lab 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.

PEA 105. Weight Training .....2 credit hours

Prerequisite: None
30 lab hours
Fulfills core elements: None

This course provides opportunities for students to acquire skills which will be a source of healthful and recreational exercise.

PEA 109. Beginning Tennis .....1 credit hour

Prerequisite: None
30 lab 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 credit hours

Prerequisite: None
45 lecture hours
Fulfills core elements: None

This is a basic course for students with no previous background in Physics. Fundamental concepts of Physics are taught, but the emphasis is on acquiring the elementary skills necessary to succeed in later courses. These skills include units, conversions, measurement, graphing, and problem solving techniques. Physics topics include heat, energy, motion, force, basic electricity, and the collection (with analysis) of experimental data. Students wishing to improve their Physics background before taking 100 level Physics courses, or students desiring an exposure to Physics should take this course.

PHY 105. Conceptual Physics .....4 credit hours

Prerequisite: MTH 090
Corequisite: PHY 105L
45 lecture - 45 lab 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 credit hours

Prerequisite: MTH 090
45 lecture - 45 lab 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 credit hours

Prerequisite: MTH 169
Corequisite: MTH 177 and PHY 111L
45 lecture - 45 lab hours
Fulfills core elements: 4,5,7,9,11,15,18

The topics of mechanics, wave motion and heat are presented to pre-professional 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 credit hours

Prerequisite: PHY 111
Corequisite: PHY 122L
45 lecture - 45 lab 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 credit hours

Prerequisite: MTH 191, High School Physics or PHY 105 or 111
60 lecture - 45 lab 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 credit hours

Prerequisite: PHY 211
Corequisite: PHY 222L
60 lecture - 45 lab 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 108. Government and Society .....3 credit hours

Prerequisite: None
45 lecture hours
Fulfills core elements: 1,7,21,22,23,24

This is an introductory course on the American political system: executive, legislative, and judicial functions; processes and machinery of popular control (public opinion, media, interest groups, parties, and elections). It is designed to help students to more clearly define and express their own political ideas.

PLS 112. Introduction to American Government.....3 credit hours

Honors section also offered
Prerequisite: None
45 lecture 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. This course is also taught as a television course using the program series "Government by Consent."

PLS 150. State and Local Government Politics .....3 credit hours

Prerequisite: None
45 lecture 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 credit hours

Prerequisite: Social Science course or consent
45 lecture 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.

Psychology (PSY)

PSY 095. Seminar: Psychology of Patient Management .....1 credit hour

Prerequisite: None
15 lecture hours
Fulfills core elements: None

This seminar provides a basic introduction to the systems approach in providing patient care. Topics include an explanation of general systems theory, behavior as a system, the structure and function of behavior, the external environment as a regulator of behavior, and behavioral assessment. This course is a requirement for the Dental Assisting Program.

PSY 100. Introductory Psychology.....3 credit hours

Prerequisite: None
45 lecture 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 discussed. This course also is taught as a television course using the program series "Psychology: The Study of Human Behavior."

PSY 107. Black Psychology .....3 credit hours

Prerequisite: None
45 lecture 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 114. Learning to Learn .....3 credit hours

Prerequisite: None
45 lecture hours
Fulfills core elements: 2,7,8,9

This is a course in applied psychology. Emphasis is placed on learning styles and learning strategies. Students are provided with a variety of techniques for analyzing their learning style. Next, they are given information on learning strategies and practice in developing and using various strategies.

PSY 130. Alcoholism: Its Effects, Impact and Treatment .....3 credit hours

Prerequisite: None
45 lecture 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 150. Industrial Psychology .....3 credit hours

Prerequisite: None
45 lecture hours
Fulfills core elements: 6,7,15,21

This course involves discussion of human relations in business and industry. Special attention is given to occupational information, personnel selection, training and development and employee appraisal. This is a practical introduction to the psychological dimensions and implications of the modern working world.

PSY 160. Coping with Stress.....3 credit hours

Prerequisite: None
45 lecture hours
Fulfills core elements: 7,16

This course teaches students how to relax using techniques from the University of Massachusetts Stress Reduction Clinic. In addition, various techniques are offered, including journal writing, to help students accept their feelings and know their purpose. The topics of nutritional sources of stress will also be covered.

PSY 200. Child Psychology.....3 credit hours

Prerequisite: None
45 lecture 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 209. Psychology of Adjustment .....3 credit hours

Prerequisite: None
45 lecture 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 257. Abnormal Psychology .....3 credit hours

Prerequisite: PSY 100
45 lecture 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 credit hours

Prerequisite: None
45 lecture 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.

Quality Control Technology (QCT)

QCT 093. Introduction to SPC Charting Techniques.....1 credit hour

Prerequisite: MTH 039 or permission
15 lecture hours
Fulfills core elements: None

This course introduces the student to control charts, analysis of normal variation, and capability analysis. Examples from Industrial Practice are used.

QCT 101. Process Quality Control.....3 credit hours

Prerequisite: None
45 lecture hours
Fulfills core elements: None

The concepts of variation and methods of measuring, evaluating and interpreting industrial data are discussed. An in-depth working knowledge of process control is imparted through the use of capability analysis and statistical control charts. Industrial applications are presented and class participation is used extensively in workshops.

QCT 122. Sampling Quality Control .....3 credit hours

Prerequisite: MTH 169 or consent
45 lecture hours
Fulfills core elements: None

This course involves the theory of probability and basic concepts of statistical sampling; the development of sampling plans, the effect of sample size and acceptance number on the probability of acceptance, and the use of interpretation and sampling acceptance plans are discussed. Military 105D, sequential and variable sampling are introduced and their effectiveness and industrial applications are analyzed.

QCT 174. QCT Co-op I.....1-3 credit hours

Prerequisite: QCT 101, QCT 122, consent
Fulfills core elements: None

See the description for all co-op courses at the beginning of these course descriptions

QCT 201. Quality of Service.....3 credit hours

Prerequisite: QCT 101 or equivalent experience
45 lecture hours
Fulfills core elements: 5,6,7,8

The total quality control concept in planning, organizing and implementing a quality system for the service industry is the focus of this course. Topics include the application of the tools of quality to the business of service. This course examines the means for establishing a manageable quality system, improve customer satisfaction, reduce waste/cost and monitor improvement.

QCT 213. Quality Control by Statistical Methods .....3 credit hours

Prerequisites: QCT 101, QCT 122
45 lecture hours
Fulfills core elements: None

This is an introduction to statistical testing for differences in sample means, variability and fraction defectives. The concepts of linear correlation and regression analysis are introduced. Practical problems encountered in industrial quality control are solved in the classroom to illustrate the techniques presented.

QCT 224. Quality Control Problem Solving.....3 credit hours

Prerequisites: QCT 213 and knowledge of basic algebra
45 lecture hours
Fulfills core elements: None

This course provides students with a synopsis of the material presented in the previous three courses (Process, Sampling, and Statistical Methods). The material is developed with a minimal amount of mathematical jargon which often does more to confuse than clarify. Course work stresses how to perform specific studies or techniques and does not merely inform the student. Generally, it provides a simplified procedure for applying the statistical tools which are most often used by the quality control practitioner.

QCT 225. Quality Control Management .....3 credit hours

Prerequisite: QCT 101 or Consent
45 lecture hours
Fulfills core elements: None

The total quality control concept in planning, organizing and implementing an effective system is the focus of this course. Details of how to plan a quality system, set up the organizational structure, integrate support activities, install controls and measure results are discussed. The work of quality information equipment engineering is outlined. The main jobs of quality control are defined in terms of design control, material control, product control and special studies such as GMP manual development and compliance.

QCT 226. Dimensional Metrology and Testing .....3 credit hours

Prerequisite: None
45 lecture hours
Fulfills core elements: None

This is a general introduction to important aspects of precision measurement related to inspection and quality control. Included are the scientific techniques and instrument applications used in determining dimensional measurement as practiced by skilled tradesmen, inspectors and quality control technicians.

QCT 274. QCT Co-op II .....1-3 credit hours
Prerequisite: QCT 174
Fulfills core elements: None
See the description for all co-op courses at the beginning of these course descriptions

Radiography (RAD)

Enrollment priority for these courses is granted students admitted to this program. Courses must be taken in sequence outlined in the curriculum unless consent is obtained from the Radiography division after review of previous transcripts.

RAD 100. Introduction to Radiography.....2 credit hours
Prerequisite: Admission to the Radiography Program
30 lecture 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 credit hours
Prerequisite: Admission to the Radiography Program
30 lecture 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 credit hours
Prerequisite: Admission to Program
Corequisite: RAD 112
240 clinical 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, and the demonstration of knowledge in the design and operational characteristics of equipment and accessories in diagnostic radiography.

RAD 111. Fundamentals of Radiography .....2 credit hours
Prerequisite: RAD 100
30 lecture 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. Radiography Positioning I.....2 credit hours
Prerequisite: None
Corequisite: RAD 110
15 lecture - 30 lab 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 credit hours
Prerequisite: RAD 111
30 lecture 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 credit hours
Prerequisite: RAD 110
Corequisite: RAD 123
240 clinical hours
Fulfills core elements: 7
This course provides structured clinical experience in the application of knowledge and skill in positioning the upper and lower extremities, chest, abdomen, trunk, spine and selected contrast studies, and the demonstration of knowledge in the design and operational characteristics of equipment and accessories in diagnostic radiography.

RAD 123. Radiographic Positioning II.....2 credit hours
Prerequisite: RAD 112
Corequisite: RAD 120
15 lecture - 30 lab 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 credit hours
Prerequisite: Consent
45 lecture 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 credit hours
Prerequisite: BIO 111
45 lecture 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 hour

Prerequisite: Admission to Program
Corequisite: RAD 124
7.5 lecture - 22.5 lab 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 credit hours

Prerequisite: Admission to Program or Consent
Corequisite: RAD 200, RAD 225
30 lecture 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 credit hours

Prerequisites: RAD 120
360 clinical 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, Students demonstrate knowledge in the design and operational characteristics of equipment and accessories in general radiographic rooms.

RAD 200. Physical Foundations of Radiography .....3 credit hours

Prerequisite: none
45 lecture hours
Fulfills core elements: 5

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 credit hours

Prerequisite: Admission to Program or Consent
Corequisite: RAD 217
15 lecture - 30 lab 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 credit hours

Prerequisite: RAD 150
Corequisite: RAD 215
360 clinical 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, and the demonstration of knowledge in the design and operational characteristics of equipment and accessories in diagnostic radiography.

RAD 218. Radiation Biology and Protection.....4 credit hours

Prerequisite: Admission to Program or Consent
60 lecture 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.

RAD 220. Management of Radiological Environment .....2 credit hours

Prerequisite: Admission to Program or Consent
30 lecture hours
Fulfills core elements: 7,9,21

Designed to acquaint students with various aspects of managing the modern radiology department, this course includes: department organization and operations, equipment specifications, quality assurance guidelines, patient education, planning and design.

RAD 225. Clinical Education.....3 credit hours

Prerequisite: RAD 217
Corequisite: RAD 200, RAD 135
360 clinical hours
Fulfills core elements: 7

This course provides structured clinical experience in the application and knowledge and skill sin positioning the upper extremity, chest and abdomen, trunk, spine, skull and selected contrast studies, and the demonstration of knowledge in the design and operational characteristics of equipment and accessories in diagnostic radiography.

RAD 240. Clinical Education.....2 credit hours

Prerequisite: RAD 225
225 clinical 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, skull and selected contrast studies, and the demonstration of knowledge in the design and operational characteristics of equipment and accessories in diagnostic radiography.

RAD 280. Radiographic Critique.....2 credit hours

Prerequisite: RAD 112, 123, 124, 127
30 lecture 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 of the radiograph.

Real Estate (RES)

RES 100. Real Estate Principles and Prelicensure .....4 credit hours

Prerequisite: None
60 lecture 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 credit hours

Prerequisite: None
45 lecture 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's course requirements for Real Estate Brokers.

RES 130. Real Estate Appraisal .....3 credit hours

Prerequisite: none
45 lecture 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 suggested that students take RES 100 before taking this course.

RES 140. Real Estate Law .....3 credit hours

Prerequisite: RES 100 or BMG 111
45 lecture 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 suggested that RES 100 be taken before enrolling in this course.

RES 150. Real Estate Investment .....3 credit hours

Prerequisite: None
45 lecture 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 may be used to partially satisfy the Real Estate Broker education prelicensure requirement. It is recommended but not required that RES 100 be taken before the course.

RES 160. Real Estate Property Management.....3 credit hours

Prerequisite: None
45 lecture 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 may be used to partially satisfy the State of Michigan Real Estate Broker education prelicensure requirement. It is recommended but not required that RES 100 be taken before this course.

RES 190. Real Estate Continuing Education.....½ credit

Prerequisite: None
7.5 lecture hours
Fulfills core elements: None

This is the annual continuing education course required by the State of Michigan for Real Estate Brokers and Salespersons to renew their professional licenses. Content in the course changes each year based on topic selections assigned or approved by the State Department of Commerce. Completion on either credit or audit basis satisfies the state requirement for license renewal. One hundred percent attendance is required for license renewal. It is recommended but not required that RES 100 be taken before this course.

Refrigeration/Air Conditioning (RAC)

RAC 111 through RAC 216 are primarily trade-related instruction program courses. Their purpose is to upgrade persons currently employed in this industry; however, students who are not currently employed in the industry are welcome. Presently, courses are only offered in the evenings. All training materials are provided by the Refrigeration Service Engineers Society (RSES). Students should expect to pay approximately $125 per term in addition to tuition. Consent of advisor is required for registration.

RAC 111. Refrigeration I.....5 credit hours

Prerequisite: Consent; RSES membership required
60 lecture - 15 lab hours
Fulfills core elements: None

This is the foundation course in a series of courses presented with a practical approach to servicing refrigeration air conditioning systems. Major units covered include mathematics, principles of refrigeration, refrigerants and refrigerant tables, refrigerant oils, contaminants and dryers, moisture in the air, food preservation, basic electric wiring and insulation.

RAC 122. Refrigeration II.....5 credit hours

Prerequisite: RAC 111 and consent; RSES membership required
Corequisite: RAC 123
45 lecture - 30 lab hours
Fulfills core elements: None

Emphasis in this course is on the functional principles and servicing of the following units: compressors, condensers (air and water-cooled), cooling towers, evaporator selection, metering devices (expansion valves, capillary tubes), motors and accessories, defrost systems, supermarket refrigeration, fresh meats, soda fountains and ice cream dispensers, ice making machines, beer cooling, milk cooling, estimating heat loads, commercial refrigeration

RAC 123. Refrigeration and Air Conditioning Systems Lab I.....5 credit hours

Prerequisite: RAC 124 and consent; RSES membership required
30 lecture - 45 lab hours
Fulfills core elements: None

Sketching and constructing refrigeration systems are the focus of this class. Calibration and efficiency balance of these units are stressed. Troubleshooting electrical controls and additional study in thermodynamics are included.

RAC 124. Basic Controls.....5 credit hours

Prerequisite: RAC 111 and consent; RSES membership required
75 lecture hours
Fulfills core elements: None

This is the first in a series of courses designed to provide a sound understanding of the principles and applications of electricity in refrigeration and air conditioning service, providing the essentials of the major objectives; reading and understanding complex electrical drawing, wiring diagrams and the schematics associated with refrigeration/air conditioning controls. Safety is included and emphasized.

RAC 174. RAC Co-op I.....1-3 credit hours

Prerequisite: first semester courses
Fulfills core elements: None

See the description for all co-op courses at the beginning of these course descriptions

RAC 212. Refrigeration and Air Conditioning Systems Lab II.....3 credit hours

Prerequisite: RAC 123
Corequisite: RAC 215
30 lecture - 45 lab hours
Fulfills core elements: 5,7,9

This course involves intensive, hands-on experience with refrigeration components, electrical circuitry and refrigerant handling. Students gain proficiency in analysis and repair of disfunctioning HVAC equipment in preparation for successful completion of the Refrigerant Reclamation Certification examination.

RAC 213. Air Conditioning.....5 credit hours

Prerequisite: RAC 122 or consent; RSES membership required
45 lecture - 30 lab hours
Fulfills core elements: None

This course covers the operating principles of modern mechanical equipment and troubleshooting approaches to these systems. Units covered are: air conditioning (general), psychrometric charts, insulation in air conditioning, thermostatic and pneumatic controls, heat pumps, room air conditioning units, heating and cooling systems and equipment, ducts and grills, blowers and fans, air filters, safety, first aid and codes.

RAC 214. Control Systems.....5 credit hours

Prerequisite: RAC 124 and consent; RSES membership required
Corequisite: RAC 216
45 lecture - 30 lab hours
Fulfills core elements: None

This course presents further study and practice in reading electronic wiring diagrams and schematics as applied to the electrical controlling systems of refrigeration and air conditioning, including alternating current, motors, starters, capacitors, transformers, motor protectors, standard service techniques and troubleshooting industrial controls.

RAC 215. Troubleshooting Controls.....3 credit hours

Prerequisite: RAC 214 and consent; RSES membership required
Corequisite: RAC 212
45 lecture - 30 lab hours
Fulfills core elements: None

This is an advanced, comprehensive study of the theory and applications of refrigeration and air conditioning control systems and devices: electromechanical, electronic and solid state. Problem-solving experiences are offered through operational sequencing examples and wiring diagrams on name brand systems such as Carrier, Trane, Climatrol, Honeywell, Penn, Westinghouse, Allen-Bradley, etc.

RAC 216. Refrigeration and Air Conditioning Systems Lab III.....5 credit hours

Prerequisite: RAC 212
75 lecture hours
Fulfills core elements: None

Advanced troubleshooting is the major thrust with experiences in all types of refrigeration, air conditioning and ice making equipment. Some of the equipment used are walk-in freezer, walk-in cooler, display cases, water and air cooled units, central air conditioning units, heat pumps, flaked and cubed ice machines, domestic refrigerators and freezers. Students add oil to compressors as well as test old oil for acid, using dial-a-charge method on critical charge units and adjust water regulating valves to control head pressure. Service, troubleshooting and safety are emphasized.

RAC 274. RAC Co-op II.....1-3 credit hours

Prerequisite: RAC 174
Fulfills core elements: None

See the description for all co-op courses at the beginning of these course descriptions

Respiratory Therapy (RTH)

RTH 101. Electrocardiography.....1 credit hour

Prerequisite: Admission to the Respiratory Therapy Program
15 lecture hours
Fulfills core elements: 18

This course is designed to introduce health career students to EKG. This includes basic cardiac anatomy, conductive system and basic arrhythmia/interpretation. This course is designed to provide basic knowledge of EKG, including lead placement and arrythmia recognition. This basic course will make the student more marketable by providing knowledge of an additional modality.

RTH 120. Introduction to Respiratory Therapy.....3 credit hours
Prerequisite: Admission to the Respiratory Therapy Program
45 lecture hours
Fulfills core elements: 5,7,15
This course is an introduction to health care delivery, professional development and ethics. Cardiopulmonary anatomy and physiology is also included.

RTH 121. Basic Equipment and Procedures.....4 credit hours
Prerequisite: Admission to the Respiratory Therapy Program
Corequisite: RTH 121L
45 lecture - 30 lab hours
Fulfills core elements: 5,7
This lecture/lab course covers the theory of operation of basic equipment, indications, contraindications, advantages and disadvantages. Lab experiences consist of problem solving, clinical simulations and procedures used by respiratory therapists in setting up equipment. Oxygen therapy, humidity & aerosol therapy, IPPB and alternative therapy are covered.

RTH 122. Respiratory Physiology .....3 credit hours
Prerequisites: RTH 120 and 121
45 lecture hours
Fulfills core elements: 4,5,16
This lecture course is an in-depth study of the cardiopulmonary system. Anatomy, ventilation, pulmonary function, diffusion, pulmonary vascular system, hemodynamics, V/Q relationships, control of ventilation, renal function, electrolytes and the aging process on the lungs are covered.

RTH 123. Respiratory Pathophysiology .....3 credit hours
Prerequisite: RTH 120 and 121
Corequisite: RTH 122
45 lecture hours
Fulfills core elements: 7,16
This lecture course covers the causes, treatment and assessment of common pulmonary disorders.

RTH 148. Pharmacology for Respiratory Therapists.....2 credit hours
Prerequisite: BIO 111
30 lecture hours
Fulfills core elements: None
The course provides a survey of drugs used to treat disease, with emphasis on drugs commonly used to treat cardiopulmonary disorders.

RTH 198. General Clinical Practice I .....1½ credit hours
Prerequisite: RTH 120, RTH 121, BIO 111, HSC 101
135 clinical hours
Fulfills core elements: None
This course provides clinical experience in basic bedside respiratory therapy techniques and procedures. The class meets at a clinical affiliate for 2 eight hour sessions per week. Grading for this course is on a pass/no pass basis.

RTH 199. General Clinical Practice II .....3 credit hours
Prerequisite: sucessful completion of first three semesters
Corequisite: RTH 212, 213
240 clinical hours
Fulfills core elements: 1,2,7,8,9,18,19,20
This course provides a continuation of bedside respiratory therapy techniques and procedures acquired in general clinical I and exposure to the ICU. There are two 8 hour sessions per week at a clinical affiliate.

RTH 200. Advanced Clinical Practice.....4 credit hours
Prerequisite: HSC 220, RTH 199, 212, 213 and successful completion of qualification exam
240 clinical hours
Fulfills core elements: None
Structured, at-the-bedside, practice of respiratory therapy techniques involved with the care of acutely ill patients and patients with chronic obstructive pulmonary disease is provided. Students are assigned to intensive care units of cooperating hospitals. Two eight-hour sessions per week are involved. Grading for this course is on a pass/no pass basis.

RTH 201. Specialty Clinical Practice.....2 credit hours
Prerequisite: Completion of fifth semester of RTH Program
120 clinical hours
Fulfills core elements: 7
Students are to select an area of special interest in which to specialize such as: management, teaching, cardiodiagnostics, burn medicine, home care, research, pulmonary function testing, etc. Two 8 hour sessions at a clinical office. This course is graded on a pass/no pass basis.

RTH 202. Pediatric Clinical Practice.....2 credit hours
Prerequisites: RTH 200, 212, 213, 219, successful completion of Pediatric Qualification Exam
120 clinical hours
Fulfills core elements: 18
Structured, at the bedside, practice of respiratory therapy is provided in the neonatal intensive care unit and pediatric units. Grading for this course is on a pass/no pass basis.

RTH 212. Ventilators .....5 credit hours
Prerequisite: RTH 122, 123, 148, and 198
60 lecture - 45 lab hours
Fulfills core elements: 9,18,19
This course gives an in-depth study of the use, classification, operation, advantages and disadvantages, modifications, troubleshooting, and clinical simulation case studies of managing a patient on a volume ventilator. Both adult and pediatric ventilators are taught in this class.

RTH 214. Cardiodiagnostics.....3 credit hours
Prerequisite: HSC 220,RTH 199, 212, and 213 or consent
45 lecture hours
Fulfills core elements: 16,18,19
An in-depth look at the cardiac profile, hemodynamic measurements, Swan-Ganz catherization advantages and disadvantages, basic ECG interpretation and echocardiography. This course is open to other students with permission of the instructor.

RTH 217. Seminar - Respiratory Therapy .....2 credit hours

Prerequisite: Completion of all Respiratory Therapy classes
30 lecture hours
Fulfills core elements: 9

This course is designed to help students who are in their last semester prepare for the national exams required after graduation. Students are assessed on the Entry Level Exam, Written Registry Exam, and the Clinical Simulation Exam. Mock exam fees are approximately $90 for this course.

RTH 219. Pediatric Respiratory Therapy.....3 credit hours

Prerequisites: RTH 200, Pass the ICU qualifying exam
45 lecture hours
Fulfills core elements: None

This course provides an in-depth study of the anatomy and physiology of the newborn, diseases common to neonates, infants and the older pediatric patient, as well as the respiratory care management of these patients.

RTH 221. Pulmonary Rehabilitation.....1 credit hour

Prerequisite: RTH 212
15 lecture hours
Fulfills core elements: None

This course is an overview of the pulmonary rehabilitation of people with chronic lung disease. Major topic areas to be addressed are pulmonary exercise testing, patient education, pulmonary rehabilitation techniques, organization of a pulmonary rehabilitation program, home oxygen, ventilator and infant respiratory care. In addition, several aspects of respiratory home care are reviewed. To be taken in the same semester as RTH 222.

RTH 222. Pulmonary Function Testing .....1 credit hour

Prerequisite: Completion of 1st 3 semesters
15 lecture hours
Fulfills core elements: None

This course presents principles of lung function testing as currently practiced in hospitals and clinics. In addition to other areas of respiratory therapy, students learn to interpret spirometry and diffusion studies.

Robotics (ROB)

ROB 111. CIM Fundamentals .....4 credit hours

Prerequisite: None
45 lecture - 30 lab hours
Fulfills core elements: 1,5,11,12,18,19,20

The purpose of this course is to provide an overview of the various components which make up CIM (Computer Integrated Manufacturing) systems. Students experience guided laboratory exercises in CNC (Computer Numerical Control), CAD (Computer Aided Design), CAM (Computer Aided Manufacturing), Robotics and Simulation software. Topics of discussion also include manufacturing planning and processes.

ROB 121. Robotics I .....3 credit hours

Prerequisite: None
45 lecture - 15 lab hours
Fulfills core elements: 7,10,18,19

This is an elementary course exposing students to hands-on programming of industrial robots. Emphasis is placed on application of flexible automation, types of programming, sensors, and feedback devices. Field trips to local users or manufacturers of robotic equipment are an integral part of this course.

ROB 174. ROB Co-op I.....1-3 credit hours

Prerequisite: Consent
Fulfills core elements: None

See the description for all co-op courses at the beginning of these course descriptions

ROB 212. Robotics II .....4 credit hours

Prerequisite: ROB 111 or 121
30 lecture - 60 lab hours, plus open lab time
Fulfills core elements: 7,9,11,18,19

This class concentrates on programming techniques. 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.

ROB 223. Robotics III.....4 credit hours

Prerequisite: ROB 212
30 lecture - 60 lab hours, plus open lab time
Fulfills core elements: 7,9,11,18

Students learn to work with peripheral devices in various robotic workcells. Experiments include part recognition, counting, distance measuring, sorting, and palletizing. Programmable controllers are interfaced with robots in an integrated manufacturing cell. The students are introduced to robotic simulation, vision systems, and bar coding.

ROB 224. Robotics IV.....4 credit hours

Prerequisite: ROB 223
30 lecture - 60 lab hours, plus open lab time
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 260. CIM Applications .....4 credit hours

Prerequisite: Consent
60 lecture hours, plus open lab time
Fulfills core elements: 5,7,8,9,11,18,19

In this course a team of students from CAD, NCT, and Integrated Manufacturing are assigned a product. Course activities require the development of a suitable design identification of manufacturing techniques, and the assembly and testing of the completed product utilizing a "work cell" model.

ROB 274. ROB Co-op II.....1-3 credit hours

Prerequisite: ROB 174, consent
Fulfills core elements: None

See the description for all co-op courses at the beginning of these course descriptions

Russian (RUS)

RUS 111. First Year Russian I.....4 credit hours
Prerequisite: None
45 lecture - 15 lab hours
Fulfills core elements: 13,14,24

This is a beginning and transferable course in Russian 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.

RUS 120. Conversational Russian.....2 credit hours
Prerequisite: None
30 lecture hours
Fulfills core elements: 13,14,24

Designed to be a short term, seven week, non-sequential conversational course. This course is intended for those interested in basic and essential aspects of the Russian language and culture for the purpose of travel and enjoyment. The writing system, useful everyday expressions, and current topical informational items are studied.

RUS 121. Intermediate Conversational Russian .....2 credit hours
Prerequisite: RUS 120 or consent
30 lecture hours
Fulfills core elements: 13,14,24

This course is a continuation of RUS 120. It is conversational in nature, designed mainly for those interested in travel and the cultural aspects of the Soviet Union. Basic and necessary expressions and vocabulary relevant to present day situations are emphasized.

RUS 122. First Year Russian II.....4 credit hours
Prerequisite: RUS 111 or consent
60 lecture hours
Fulfills core elements: 13,14,24

This is a continuation of GS 111. Continuing classroom work and language laboratory sessions help the student to acquire basic conversational tools of the language as well as basic informational aspects of the culture.

Science (SCI)

SCI 100. Introduction to Natural Sciences ....1 credit hour
Prerequisite: None
7.5 lecture - 22.5 lab hours
Fulfills core elements: 15, 16, 17, 18

This course is designed to allow students to acquire the knowledge needed to appreciate the importance of the natural sciences in everyday life. This knowledge consists of facts, familiarity with general concepts and an understanding of how science works. The course is not designed for transfer and is intended primarily for students in Business, Public Service, and Technology career-entry programs.

Sociology (SOC)

SOC 100. Principles of Sociology .....3 credit hours
Prerequisite: None
45 lecture 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 (power, sanctions, needs, values) that pressure us to conform or to deviate from social expectations. Some issues to be examined include ethics and applications of social research, social responsibility and management of change. This course is also taught as a television course using the series "The Sociological Imagination."

SOC 201. Medical Sociology.....3 credit hours
Prerequisite: None
45 lecture 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 credit hours
Prerequisite: None
45 lecture 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 and Society .....3 credit hours
Prerequisite: None
45 lecture hours
Fulfills core elements: 6,7,8,10,21,24

This course examines social and personal responses to the aging process. Emphasis is placed on social attitudes, preparation for the adaptive challenges of retirement, role changes in midlife, youth and aged interaction, problems of housing, family bonds, illness, victimization, substance abuse, finances, and community services and personnel. Also examined are issues such as caring for elderly relatives, ageism, senior power, medicare and social security, substance abuse and meeting the needs of the aging population.

SOC 205. Race and Ethnic Relations.....3 credit hours
Prerequisite: None
45 lecture 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, majorities and minorities in racial subgroups.

SOC 207. Social Problems.....3 credit hours
Prerequisite: None
45 lecture 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 credit hours
Prerequisite: None
45 lecture 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 credit hours
Prerequisite: None
45 lecture 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 111. First Year Spanish I.....4 credit hours
Prerequisite: None
60 lecture hours
Fulfills core elements: 13,14,24
This is a beginning course in Spanish using the conversational approach. Spoken language is mastered through classroom and laboratory practice. Cultural aspects of Spain and Latin America are highlighted.

SPN 112. Spanish Laboratory I.....1 credit hour
Corequisite: SPN 111
30 lab hours
Fulfills core elements: 13,14
This course is intended to augment SPN 111. Students work in a supervised language lab with taped materials which correlate to the lessons in their texts and workbooks. Students are provided with supplemental listening aids that include both music and literature.

SPN 119. Spanish Language Adventures.....1 credit hour
Prerequisite: None
15 lecture 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 firsthand the outstanding cultural attractions, and have the opportunity to practice Spanish throughout their stay.

SPN 120. Beginning Conversational Spanish - Level I.....2 credit hours
Prerequisite: None
30 lecture hours
Fulfills core elements: 13,14,24
Conversational in approach, this course assumes no previous knowledge of the language. It is designed for students interested in practicing the fundamentals of spoken Spanish to enhance their travel enjoyment in Spain and Latin America as well as to promote an appreciation of the Hispanic world. This course may be taken as a basic review of the first half of SPN 111.

SPN 121. Beginning Conversational Spanish - Level II.....2 credit hours
Prerequisite: SPN 120 or equivalent
30 lecture hours
Fulfills core elements: 13,14,24
A continuation of SPN 120. This course is designed to further develop the skills acquired in Spanish 120. It is for students interested in expanding their speaking and comprehension skills, and their knowledge of Spanish grammar and Hispanic culture. Successful completion of this course satisfies the prerequisite for SPN 122. SPN 121 may be taken as a basic review of the second half of SPN 111.

SPN 122. First Year Spanish II.....4 credit hours
Prerequisite: SPN 111 or equivalent
60 lecture hours
Fulfills core elements: 13,14,24
A continuation of SPN 111. Emphasis is on the spoken form and on the cultures of Latin American countries and Spain.

SPN 123. Spanish Laboratory II.....1 credit hour
Corequisite: SPN 122
30 lab hours
Fulfills core elements: 13,14
This course is intended to augment SPN 122. Students work in a supervised language lab with taped materials which correlate to the lessons in their texts and workbooks. Students are provided with supplemental listening aids that include both music and literature.

SPN 211. Intermediate Conversational Spanish .....2 credit hours
Prerequisite: SPN 121 or equivalent
30 lecture 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.

SPN 213. Second Year Spanish I .....3 credit hours
Prerequisite: SPN 122, or equivalent or consent
45 lecture 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.

SPN 224. Second Year Spanish II .....3 credit hours

Prerequisite: SPN 213, or equivalent or consent
45 lecture 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.

SPN 225. Introduction to Business Spanish .....3 credit hours

Prequisite: SPN 213, or equivalent, or consent
45 lecture hours
Fulfills core elements: None

This course is designed to introduce students to business concepts and vocabulary through both written and oral forms. Students write business letters in Spanish and apply Spanish conversational skills to discussion of and participation in various business situations.

Speech (see Communications)

Student Services (STS)

STS 100. Career Planning Seminar .....3 credit hours

Prerequisite: None
45 lecture hours
Fulfills core elements: 7,9

This course is designed for persons undecided about a career goal or program of study or interested in making a career change. Students complete a self-assessment of interests, work values, skills, and abilities through exercises and vocational inventories. They also learn how to research careers and become more knowledgeable of careers, career alternatives, and employment trends. Other topics include decision-making skills, time management, and job hunting techniques (resumes, job interviews, job leads, correspondence). Students complete a personal career plan at the end of the course.

STS 102. Independent Study - Career Planning .....1 credit hour

Prerequisite: None
15 lecture hours
Fulfills core elements: None

The Independent Study in Career Planning is designed for those undecided about their career and life goals and unable to come to campus regularly for a group course (see STS 100). At their own pace, participants complete a series of exercises, activities, and vocational tests. With these tools, they learn about their goals, interests, values, skills, and abilities, and they research occupations and learn decision-making techniques. Participants write a summary career plan upon completion and meet for consultation with the instructor during the period of independent study. (Hours are arranged on an individual basis with the instructor; an initial course orientation is held on campus; students should notify the instructor after enrolling in the class).

Surgical Technology (SUR)

SUR 100. Surgical Technology I .....3 credit hours

Prerequisite: Admission to Program
Corequisite: SUR 101L
45 lecture - 30 lab hours
Fulfills core elements: 7

In this course, students become familiar with the services provided by a surgical technologist and the surgical technologist's role. Hospital organization, the history of surgery, the preparation and maintenance of a sterile environment, the preparation of a case, and ethical and legal issues are studied. Students also participate in a weekly laboratory experience to practice basic surgical technology skills.

SUR 120. Surgical Technology II Theory.....3 credit hours

Prerequisite: A grade of "C" or better in SUR 100, BIO 111, BIO 237
Corequisite: SUR 125
45 lecture hours
Fulfills core elements: 7

This course builds on the information covered in Surgical Technology I. Students become more familiar with the surgical technologist's role. Basic operative procedures, emergency situations, operating room records, communication skills, and specialized supplies and equipment are stressed.

SUR 125. Surgical Technology II Lab/Clinical .....3 credit hours

Prerequisite: A grade of "C" or better in SUR 100, BIO 111, BIO 237
Corequisite: SUR 120
30 lab - 240 clinical hours
Fulfills core elements: 9

This course complements the Surgical Technology II theory course. It provides the student with laboratory practice that supports the lecture topics. The lab focus is on setting up a basic case, handling emergency situations, completing records, using specialized equipment and supplies, and communications. Some hospital experience is included.

SUR 140. Surgical Technology Pharmacology .....2 credit hours

Prerequisite: SUR 100, BIO 111, BIO 237
30 lecture hours
Fulfills core elements: 5

This course acquaints students with common principles of pharmacology, allowing an understanding of the types, usages, and effects of various medications (agents) commonly used in the operating environment. Measurement, terminology, proper handling, responsibility of the surgical technologist, usages, and anesthesia will be covered.

SUR 150. Surgical Technology III Theory .....3 credit hours

Prerequisite: SUR 120, 125, 140
Corequisite: SUR 155
45 lecture hours
Fulfills core elements: 7, 16, 18

In this course, advanced principles of the surgical technologist's role are discussed. Students learn advanced surgical procedures. Also addressed are patient's rights and concerns; ethical, moral, and legal issues; job application; and graduate certification.

SUR 155. Surgical Technology III Practice ...4 credit hours

Prerequisite: SUR 120, 125, 140
Corequisite: SUR 150
360 clinical hours
Fulfills core elements: 9

This course complements the Surgical Technology III Theory course. Students gain experience in the surgical technologist role by practicing in the scrub capacity in hospitals on a variety of cases. All surgical specialties are addressed with mastery of general cases and familiarity with more complicated cases expected.

Tax (TAX)

TAX 101. Federal Income Taxes For Individuals and Small Business Owners.....3 credit hours

Prerequisite: MTH 163 or Consent
45 lecture hours
Fulfills core elements: 5,7,9,11

This is a beginning course in Federal Income Tax Return preparation for individuals, (including sole proprietorship businesses). Students receive practical experience in preparation of tax returns, both manually and on the computer. The course is best suited for business owners wishing to prepare their own returns or those seeking employment as a paraprofessional in the tax field.

TAX 102. Federal Income Taxes for Individuals and Small Business Owners.....3 credit hours

Prerequisite: TAX 101, ACC 200 or consent
45 lecture hours
Fulfills core elements: 5,7,9,11

This course is an advanced course in Federal Income Tax Return preparation for individuals, (including sole proprietorship businesses). Students receive practical experience in preparation of tax returns, both manually and on the computer. The course is best suited for business owners wishing to prepare their own returns or for those seeking employment as a paraprofessional in the tax field.

TAX 103. Michigan and Local Taxes for Individuals and Small Businesses.....3 credit hours

Prerequisite: TAX 101, ACC 200 or consent
45 lecture hours
Fulfills core elements: 5,7,9,11

This course covers Michigan Taxes required of individuals (including sole proprietorship businesses). Students receive practical experience in preparation of the Michigan Individual Income Tax Return, the Michigan Intangibles Tax Return and the Michigan Single Business Tax Return as it pertains to sole proprietorships. The course is best suited for business owners wishing to prepare their own returns or those seeking employment as a paraprofessional in the tax field.

TAX 121. Business Income Tax Basics.....2 credit hours

Prerequisite: TAX 101 or Consent
30 lecture hours
Fulfills core elements: None

This course provides a theoretical foundation for handling business issues. Students receive practical experience in preparation of Federal and Michigan tax returns (including the Michigan SBT) for the sole proprietor, both manually on the computer. The course is best suited for business owners wishing to prepare their own tax returns or those seeking employment as paraprofessionals in the tax field.

TAX 123. Income Tax for Partnerships ..... ½ credit hour

Prerequisite: TAX 121 or consent
7.5 lecture hours
Fulfills core elements: None

This course covers basic Federal and Michigan income tax returns for businesses operating as partnerships. Students receive practical experience in the preparation of these Federal and Michigan tax returns, both manually and on the computer. The course is best suited for business owners wishing to prepare their own tax returns or those seeking employment as a paraprofessional in the tax field.

TAX 124. Income Tax for Corporations .....1 credit hour

Prerequisite: None
Co-requisite: TAX 121 or Consent
15 lecture hours
Fulfills core elements: None

This course covers basic Federal and Michigan income tax returns for businesses operating as corporations. Students receive practical experience in preparation of these Federal and Michigan tax returns, both manually and on the computer. The course is best suited for business owners wishing to prepare their own tax returns or those seeking employment as paraprofessionals in the tax field.

TAX 125. Income Tax for Sub S Corporations ..... ½ credit hour

Prerequisite: Tax 124 or Consent
7.5 lecture hours
Fulfills core elements: None

This course covers basic Federal and Michigan income tax returns for businesses operating as Sub Chapter S corporations. Students receive practical experience in preparation of these Federal and Michigan tax returns, both manually and on the computer. The course is best suited for business owners wishing to prepare their own tax returns or those seeking employment as paraprofessionals in the tax field.

TAX 190. Tax Practice ..... ½ credit hour

Prerequisite: TAX 101, 121, or 124 or Consent
Corequisite: TAX 123 and TAX 125 or Consent
7.5 lecture hours
Fulfills core elements: None

This course is designed for those intending to work as paraprofessionals in the tax field. The importance of maintaining a professional image with clients is explored as well as various issues that frequently occur in the audit of client returns. Students are given an opportunity to build a portfolio that will assist them in demonstrating their proficiency in preparing tax returns to prospective employers. This is a capstone course designed for students who will seek employment as a tax preparer.

TAX 210. Advanced Issues in Individual Taxes ..... ½ credit hour

Prerequisite: TAX 101, TAX 121 or Consent
7.5 lecture hours
Fulfills core elements: none

This course covers advanced issues in individual taxation involving deferred income, fringe benefits, and employment related deductions. It also covers advanced issues involving portfolio and passive income, and itemized deductions. The course is best suited for the professional who is seeking advanced training.

TAX 220. The Michigan Small Business Tax ..... ½ credit hour

Prerequisite: TAX 109 or Consent
7.5 lecture hours
Fulfills core elements: None

This course covers advanced issues in the Michigan Small Business Tax, including adjustments and apportionments. The course is best suited for the tax professional who is seeking advanced training.

Trade Related Instruction (TRI)

TRI 092. Review for Apprentice Test .....4 credit hours

Prerequisite: None
60 total hours
Fulfills core elements: None

This course reviews materials covered on typical Auto Manufacturing Apprenticeship Application Tests, including blueprint reading, spatial relationships, power mechanics, and numerical reasoning.

TRI 099. Skilled Trades Industrial Safety.....2 credit hours

Prerequisite: None
30 lecture hours
Fulfills core elements: None

This course is designed to provide the industrial skilled trades persons with knowledge of safety fundamentals and practices, accident causes, impact and prevention, safety organization in the plant, the need for safety rules, mechanical safeguards, and lockout procedures. Health and hygiene, industrial housekeeping and fire safety are included, as well as a study of hazards and safety rules associated with energy sources, hand, power and machine tools, ladders, scaffolds, hazardous materials, hoists, cranes, conveyors, ropes, chains, slings, and operation of powered trucks.

TRI 103. Sheet Metal Blueprint Reading and Layout .....3 credit hours

Prerequisite: None
60 lecture hours
Fulfills core elements: None

Elementary sheet metal layout with emphasis placed on developing sheet metal patterns by standard short cut methods is the focus of this course. Hands-on experience fabricating the patterns into actual sheet metal locks, seams, clips, connectors, ducts, elbows, tees and offsets takes place in the sheet metal shop.

TRI 105. Advanced Sheet Metal Layout .....3 credit hours

Prerequisite: None
60 lecture hours
Fulfills core elements: None

Advanced sheet metal layout teaches the actual development of more difficult sheet metal fittings; triangulation and parallel line methods of development. The Development and fabrication of the fittings most often needed in today's modern heating, ventilating and air conditioning systems is emphasized.

TRI 115. BPR/Facilities Maintenance .....3 credit hours

Prerequisite: None
45 lecture hours
Fulfills core elements: None

A basic course in reading engineering plans and drawings. Understanding electrical, mechanical, and fluid power systems through the use of schematic diagrams. Major units covered are elements of machine drawings, hydraulic and pneumatics, building drawings, electrical drawings, sheet metal drawings, piping drawings, and welding processes and symbols.

TRI 140. Millwright Theory .....2 credit hours

Prerequisite: None
30 lecture hours
Fulfills core elements: 7,9

This course includes millwright practices encompassing major units such as 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. Maintenance of bearings, belts, chain drives and conveyors included.

TRI 174. TRI Co-op I.....1-3 credit hours

Prerequisite: First semester courses, consent
Fulfills core elements: None

See the description for all co-op courses at the beginning of these course descriptions

TRI 201. Plumbing and Pipefitting I .....3 credit hours

Prerequisite: MTH 039
45 lecture hours
Fulfills core elements: None

This 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 included.

TRI 202. Plumbing and Pipefitting II .....4 credit hours

Prerequisite: TRI 201,
60 lecture hours
Fulfills core elements: None

This course is a continuation of FLP 201 involving the study of water supply, waste disposal, drainage, venting, unit sanitation equipment and plumbing codes.

TRI 240. Plant Layout and Material Handling Systems .....4 credit hours

Prerequisite: IND 100
60 lab hours
Fulfills core elements: 9

This class includes blueprint Reading and simplified drawing of typical free and power type conveyor systems as well as plant layout drawing of machinery, foundations, exhaust systems, heat treat furnaces, hoists, catwalks and platforms.

TRI 274. TRI Co-op I I.....1-3 credit hours

Prerequisite: TRI 174
Fulfills core elements: None

See the description for all co-op courses at the beginning of these course descriptions

Welding and Fabrication (WAF)

WAF 100. Fundamentals of Welding .....2 credit hours
Prerequisite: None
15 lecture - 45 lab 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 credit hours
Prerequisite: None
15 lecture - 45 lab 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 credit hours
Prerequisite: None
15 lecture - 45 lab 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. Both A.C. and D.C. welding is covered, electrode identification, classification and proper applications to typical operations.

WAF 103. Heli-ARC Welding .....2 credit hours
Prerequisite: None
15 lecture - 45 lab 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 and Brazing .....2 credit hours
Prerequisite: None
15 lecture - 45 lab 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. Fundamental Welding for Art/Engineering Schools.....2 credit hours
Prerequisite: None
15 lecture - 45 lab 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 credit hours
Prerequisite: None
45 lecture 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 (Basic Oxy-Acetylene)....4 credit hours
Prerequisite: None
30 lecture - 90 lab 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 (Basic ARC).....4 credit hours
Prerequisite: None
30 lecture - 90 lab 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 stressed.

WAF 123. Welding (Advanced Oxy-Acetylene).....4 credit hours
Prerequisite: WAF 111
30 lecture - 90 lab 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 fabricative welded joints on steel plate and pipe. Related theory included.

WAF 124. Advanced ARC Welding .....4 credit hours
Prerequisite: WAF 112
30 lecture - 90 lab 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 for Welders.....2 credit hours
Prerequisite: None
15 lecture - 45 lab 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 straight edges. Template making for pipe cutting and joining is emphasized. A basic math review and the properties of a circle such as radius, chords, and degrees of angularity for jobs done in the field are included.

WAF 210. Welding Metallurgy .....3 credit hours

Prerequisite: None
22.5 lecture - 22.5 lab hours
Fulfills core elements: 5,7,18,19

This course focuses on metal properties and identification properties through testing, effects of alloying element, specification use and application of mild steel, low steel alloys, stainless steels, principles of electricity as they apply to different welding applications heat treatment of metals.

WAF 215. Advanced T.I.G. and M.I.G. Welding .....4 credit hours

Prerequisite: None
30 lecture - 90 lab 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 credit hours

Prerequisite: Consent
30 lecture - 90 lab hours
Fulfills core elements: 5,7,18,19

This course involves specialized oxy-acetylene welding, inert gas-shield arc and consumable carbon dioxide welding. Emphasis is given to aluminum, stainless steel, high alloy steels and cast iron. Procedures for welding of the exotic metals such as titanium, columbium, zirconium, and molybdenum are included.

WAF 227. Basic Fabrication .....3 credit hours

Prerequisite: Consent
30 lecture - 30 lab 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 credit hours

Prerequisite: Consent
45 lecture - 15 lab 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.

Yoga (OG)

YOG 101. Introduction to the Philopsophy and Practice of Yoga I .....3 credit hours

Prerequisite: None
45 lecture
Fulfills core elements: 16

This course provide an introduction to the system of Hatha Yoga and the philosophy of realized knowledge.

YOG 102. Introduction to the Philopsophy and Practice of Yoga II .....3 credit hours

Prerequisite: YOG 101
45 lecture
Fulfills core elements: 14,16

A continuation of YOG 101, relating the system of Hatha Yoga to Hindu traditions.

Course Changes: Code, Title, and Credit Changes

OLD Course Code, Title, and Credit		NEW Course Code, Title, and Credit	
ACS 041	Vocabulary & Comprehension Skills I for ESL....4	ACS 041	ESL Vocabulary and Comprehension Skills I....4
ACS 046	Vocabulary & Comprehension Skills II for ESL....4	ACS 046	ESL Vocabulary and Comprehension Skills II....4
ACS 071	Vocabulary & Comprehension Skills III for ESL....4	ACS 071	ESL Vocabulary and Comprehension Skills III....4
ACS 090	Family Literacy....3	ACS 179	Family Literacy....3
ACS 104	Study Skills....2	ACS 104	Study Skills Short Course....2
ANT 150	Religions of the World....3	HUM 145	Comparative Religions....3
ANT 211	Introduction to Philosophy and Practice of Yoga I....3	YOG 101	Introduction to Philosophy and Practice of Yoga I....3
ANT 222	Introduction to Philosophy and Practice of Yoga II....3	YOG 102	Introduction to Philosophy and Practice of Yoga II....3
BPR 101	Bueprint Reading for Manufacturing....3	MTT 101	Bueprint Reading for Manufacturing....3
BPR 107	Industrial Blueprint Reading....3	IND 108	Industrial Blueprint Reading....3
CCW 174	CCW Co-op Education I....1-3	CCW 174	CCW Co-op Education I-A....1-3
CIS 260	Using Internet Tools....2	CIS 260	Web Site Management....2
CIS 290	Microcomputer Business Technology....4	CIS 290	Microcomputer System Support....4
CON 121	Carpentry-Framing....3	CON 121	Property Maintenance I....3
DEN 108	Principles of Dental Radiography....1	DEN 108	Dental Radiography....1
DEN 130A	Oral Diagnosis Practicum....0.5	DEN 130A	Oral Diagnosis/Clinical Practicum....0.5
DEN 130B	Oral Diagnosis Practicum....0.5	DEN 130B	Oral Diagnosis/Clinical Practicum....0.5
DEN 202	Advanced Dental Practice....3	DEN 202	Advanced Clinical Practice....3
DPP 222	Digital Prepress II....4	DPP 122	Digital Prepress II....4
ENG 140	Science Fiction and Horror Fiction....3	ENG 140	Horror and Science Fiction....3
IND 111	Industrial Drafting....4	IND 111	Industrial Drafting I....4
IND 114	Industrial Drafting....4	IND 114	Industrial Drafting II....4
INM 111	CIM Fundamentals....4	ROB 111	CIM Fundamentals....4
INM 121	Robotics I....3	ROB 121	Robotics I....3
INM 174	INM Co-op Education I....1-3	ROB 174	ROB Co-op Education I....1-3
INM 212	Robotics II....2	ROB 212	Robotics II....2
INM 223	Robotics III....4	ROB 223	Robotics III....4
INM 224	Robotics IV....4	ROB 224	Robotics IV....4
INM 260	CIM Applications....4	ROB 260	CIM Applications....4
INM 274	INM Co-op Education II....1-3	ROB 274	ROB Co-op Education II....1-3
MTH 116	Radiographic Calculations....3	MTH 116	Radiographic Calculations....2
MUS 149	Sight Singing/ Ear Training....2	MUS 149	Ear Training....2
PHO 210	Alternative Processes & New Technologies....3	PHO 210	Alternative Processes....3
PHT 100	Introduction to Pharmacy and Health Care Systems....3	PHT 100	Introduction to Pharmacy and Health Care Systems....4
PHT 101	Drug Products and Nomenclature....2	PHT 101	Pharmacology for Pharmacy Technicians....4
PHT 103	Pharmaceutical Dosage....2	PHT 103	Pharmaceutical Calculations....2
PHT 103	Pharmacy Operations....3	PHT 150	Pharmacy Operations and Compounding....3
PHT 198	Pharmacy Experience....3	PHT 198	Pharmacy Experience....4
RTH 212	Ventilators....4	RTH 212	Ventilators....5
STS 101	Student Success Seminar....1	ACS 101	Student Success Seminar....1

New Courses

Code	Title	Credit
CCW 176	CCW Co-op Education I-B	1-3
CCW 178	CCW Co-op Education I-C	1-3
CIS 116	Windows Operating System I (Windows 95)	1
CIS 117	Windows Operating System II (Windows 95)	1
CIS 118	MS DOS for Technicians	2
CIS 265A	HTML Short Course	1
CIS 277	Java for Programmers	3
CIS 292	Developing Applications with Oracle	4
COR 110	Basic Corrections Officer Academy	13
CPS 285	Advanced Visual Basic Programming	4
CPS 295	Advanced Visual C++ Windows Programming	4
CUL 230	Quantity Food Production	3
CUL 231	A La Carte Kitchen	3
DEN 109	Oral Hygiene	1
DEN 116	Four-Handed Dentistry: An Ergonomic Concept	0.5
DEN 119	Dental Nutrition	1
DPP 117	Introduction to Printing	4
DPP 134	Planning, Binding and Finishing	2
ECO 280	International Economics	3
EET 211	Digital Electronics Design II	3
ENG 030A	English as a Second Language IV-A	3
ENG 030B	English as a Second Language IV-B	3
ENG 031A	English as a Second Language V-A	3
ENG 031B	English as a Second Language V-B	3
ENG 183	Special Topics in African American Literature	3
ENG 185	Grammar and Usage	3
GDT 105	Introduction to Mac Graphics	3
GDT 117	Introduction to PageMaker	2
GDT 118	Advanced PageMaker	2
GDT 125	Introduction to QuarkXPress	2
GDT 126	Advanced QuarkXPress	2
GDT 137	Introduction to Illustrator	2
GDT 138	Advanced Illustrator	2
GDT 141	Introduction to Photoshop	2
GDT 142	Intermediate Photoshop	2
GDT 220	Publication Design	4
GDT 239	Imaging and Illustration	4
GDT 246	Introduction to Multimedia	4
HSC 100	Nursing Assistant Skills	4
HSC 101	Healthcare Terminology	1
HST 216	U.S. Military History, Colonial Times to Present	3
MET 188	Introduction to Engineering Design	3
PHO 225	Digital Studio Photography	3
RAD 150	Clinical Education	4
RTH 101	Electrocardiography	1

Discontinued Courses

Code	Title	Credit
ACS 115	Medical Terminology	3
ASV 232	Auto Transaxle and Overdrive Transm.	2
BIO 132	Gardening	1
BMG 120	Personal Financial Management	2
BMG 299	Work Experience Seminar	1
BOS 204	Keyboarding/Speedbuilding	2
CEM 089	Hazardous Materials	3
CIS 106	DOS Batch Files and System Management	2
CIS 130	Pascal for Business & Industry	4
CIS 151	Introduction to Lotus 1-2-3	2
CIS 230	Advanced Pascal for Business & Industry	4
CIS 276	Advanced C Programming Language	4
CIS 284	Data Communications	3
CPS 186	Introduction to Pascal Programming	4
CPS 286	Advanced Pascal Programming	4
CUL 222	Quantity Food Production	6
DEN 127	Dental Nutrition	2
ELE 123A	Fundamentals of Electricity A	4
ELE 123B	Fundamentals of Electricity B	4
ELE 139	Microprocessors	4
ELE 213	Semiconductor Applications	4
ELE 215	Digital Communications I	4
ELE 225	Digital Communications II	4
ELE 260	Telephone System Signaling	4
GDT 102	Computer Aided Publishing I	4
GDT 113	Principles of Production	4
GDT 116	Print Photography	2
GDT 217	Computer-Aided Publishing II	4
GDT 223	Image Assembly	2
GDT 225	Offset Press Operations	4
GDT 226	Computer Aided Publishing III	4
GDT 227	Introduction to Printing Methods	4
GDT 237	Airbrush Techniques II	4
GDT 238	Computer Aided Illustration	4

Code	Title	Credit
GDT 240	Computer-Aided Presentations	3
GDT 241	Computer-aided Publishing - PC	2
GDT 242	Computer-Aided Imaging	4
MTH 033	Household Math	4
MTH 053	Mathematical Thinking	3
MTH 096	Pre-College Algebra	5
MTH 096A	Pre-College Algebra A	3
MTH 110	Handheld Calculator	2
MTH 155	Plane Geometry	4
PHT 102	Drug Distribution Systems	3
PHT 105	Preparations of Medications	2
PHT 110	Pharmaceutical Strategies	2
PHT 120	Compounding	3
PHT 130	Pharmacy Seminar	2
PSY 222	Losses and Grieving	3
RAD 130	Clinical Education	2
RAD 140	Clinical Education	2
RTH 097	Respiratory Therapy Review	1
RTH 213	Intensive Respiratory Care	4

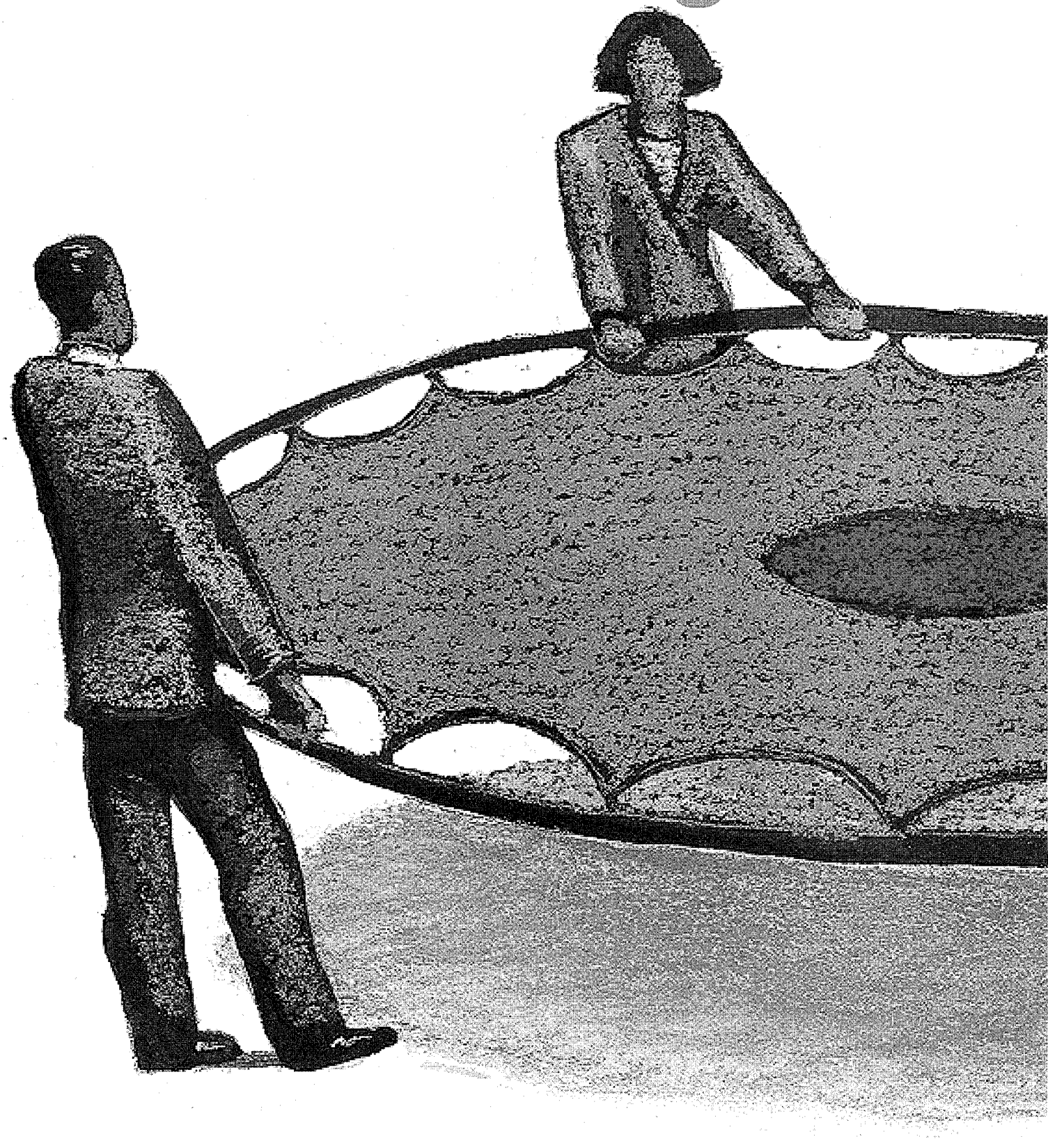
New Programs for 1998

POSC	Professional Office Systems	Achievement Certificate
SBEA	Small Business and Entrepeneurship	Achievement Certificate
SBEC	Small Business and Entrepeneurship	Mastery Certificate
NURT	Nursing Transfer	Associate in Science
HUST	Human Services Transfer	Associate in Arts
SKBC	Skill Building	Certificate of Completion
ASPC	Automotive Spray Painting	Achievement Certificate
ELEC	Electronics Technology Certificate	Mastery Certificate
MOPC	Machine Operation	Achievement Certificate

Discontinued Programs for 1998

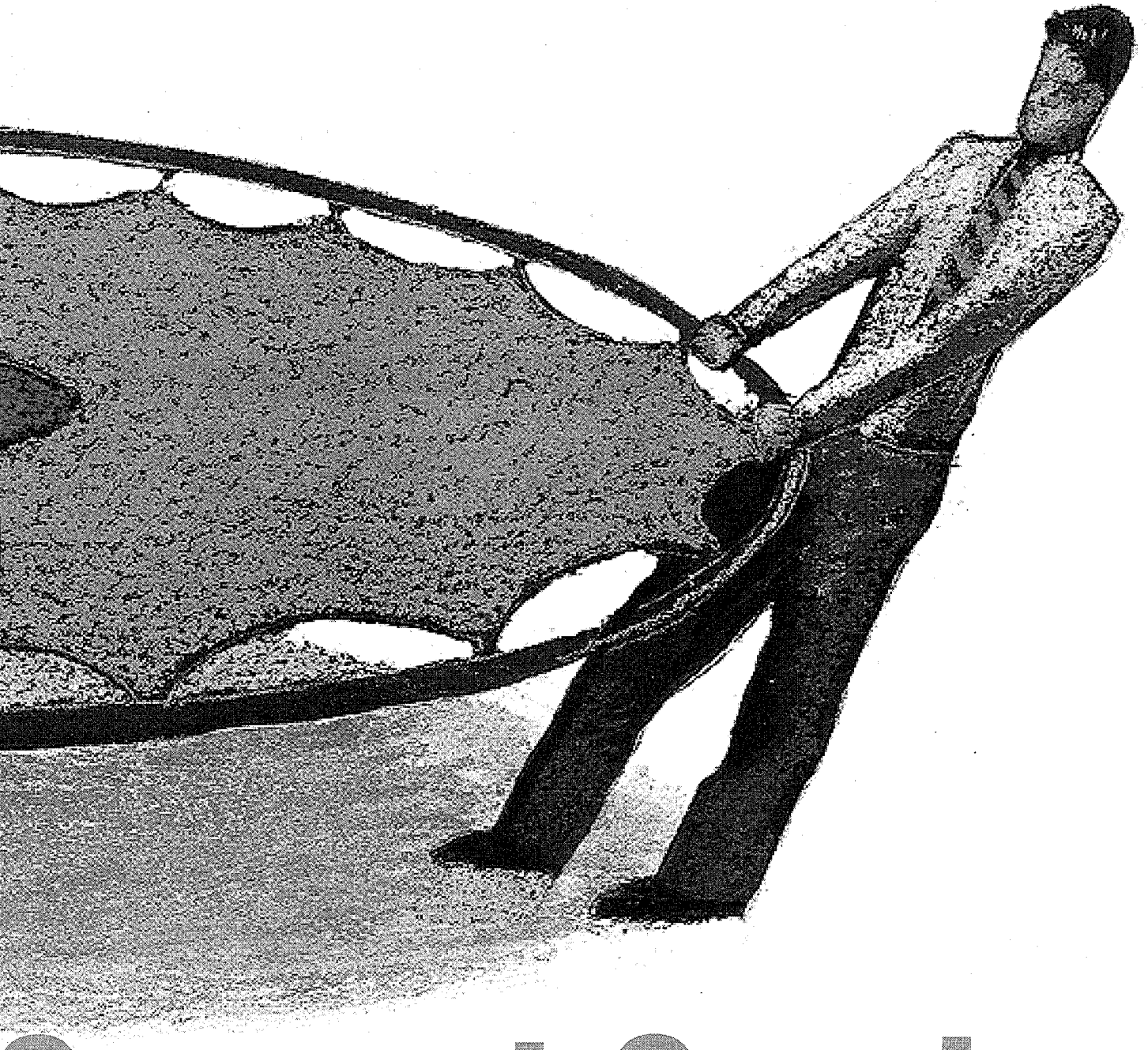
ELMT	Electro-Mechanical Technology	Associate in Technical Studies
TELE	Telecommunications Technology	Associate in Technical Studies

Curriculum Organizati

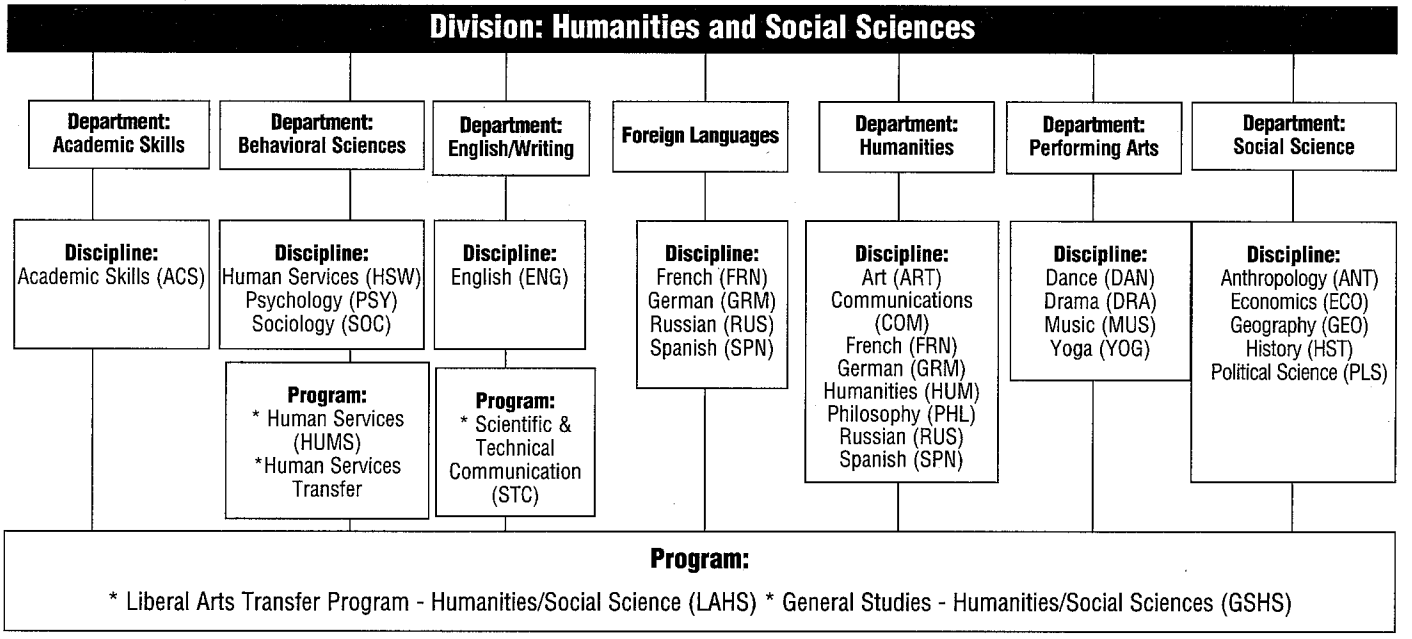


on

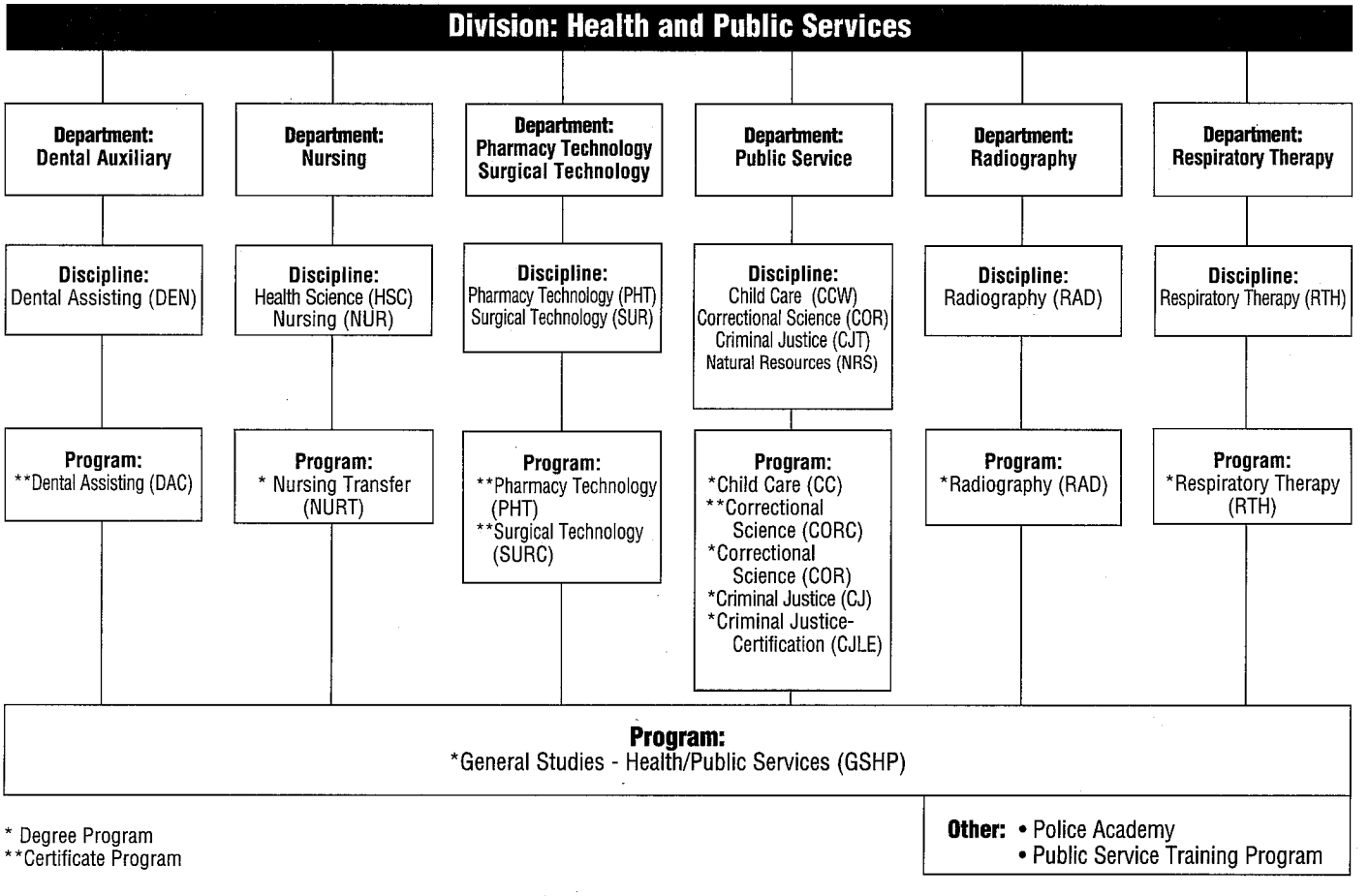
Curriculum Organization and Support Services



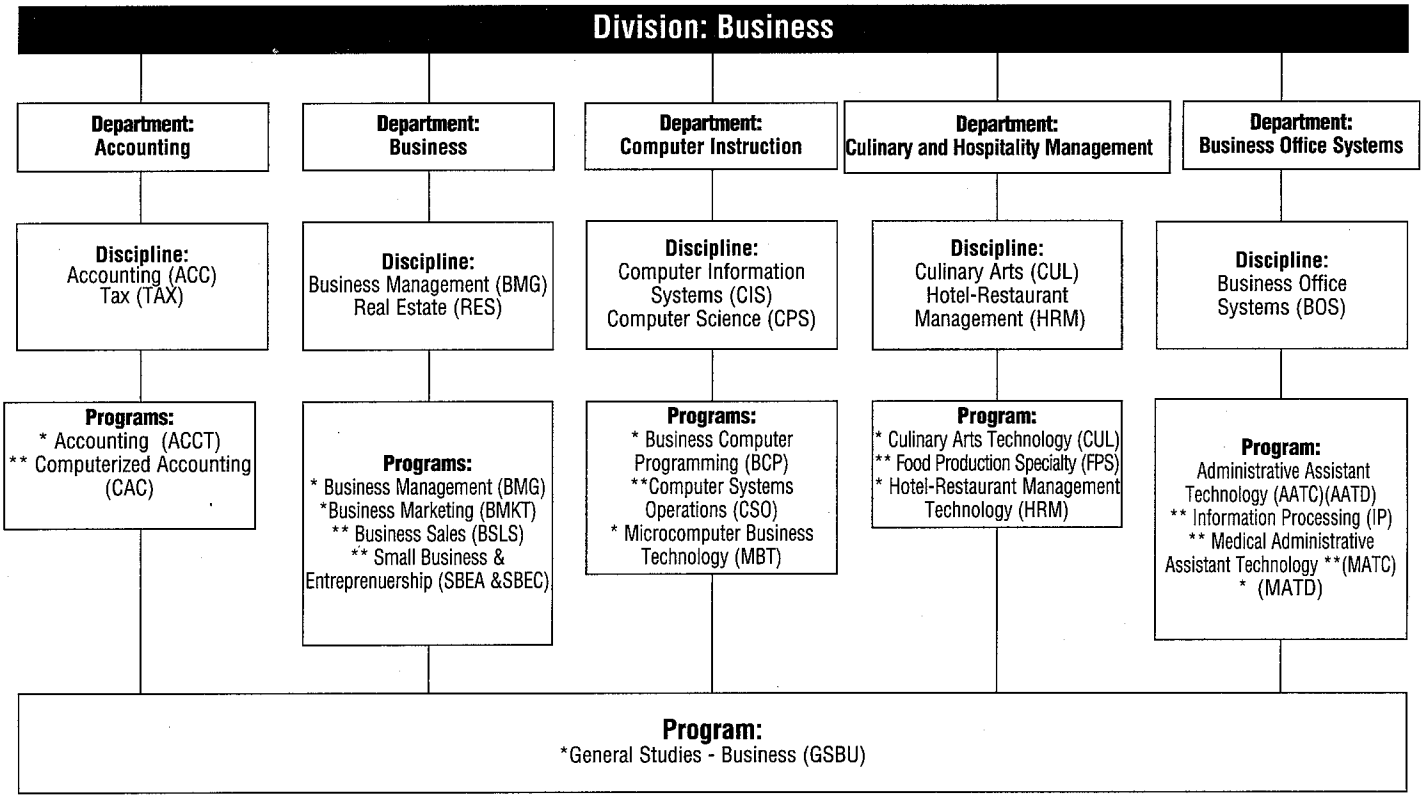
Support Services



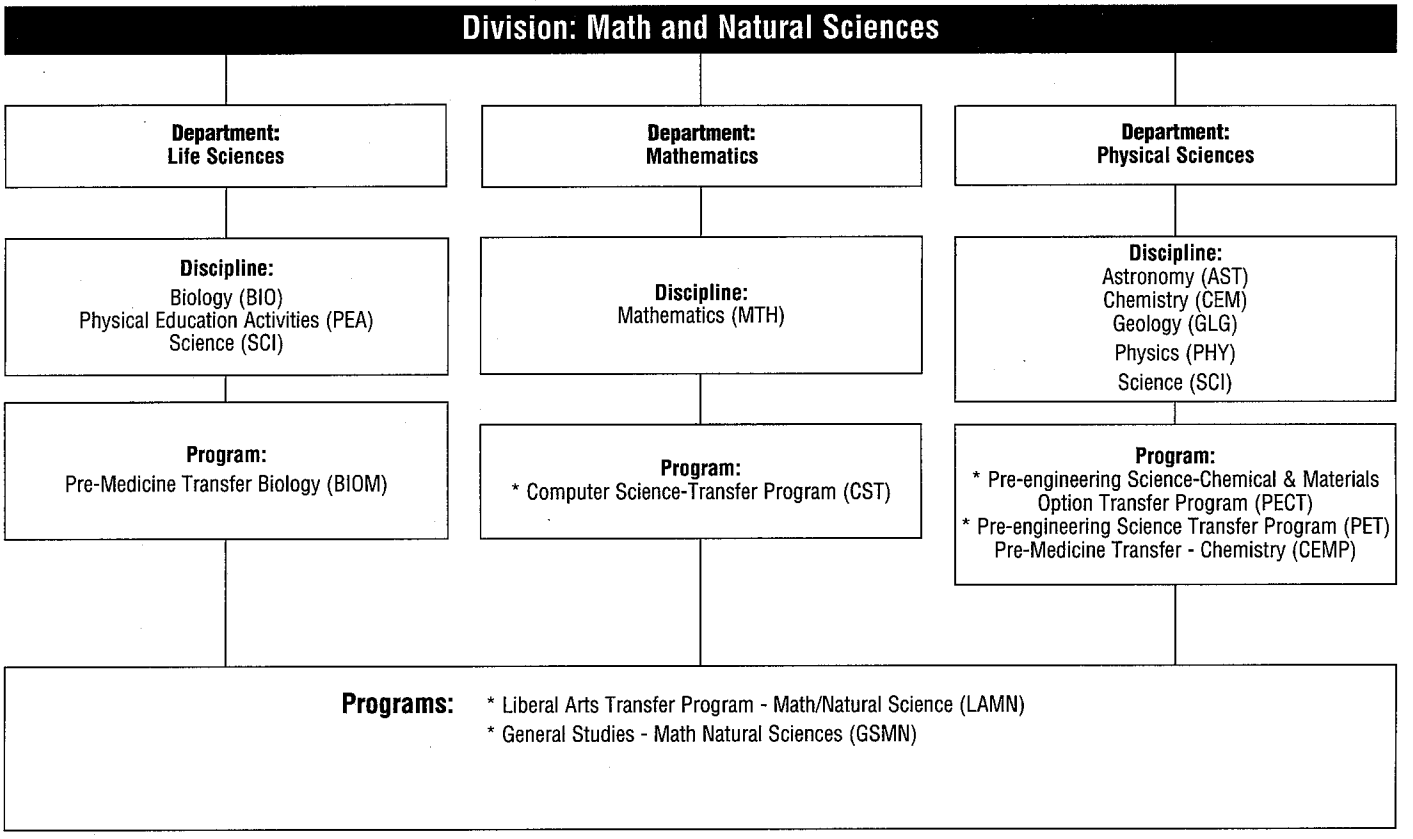
*Degree Program



* Degree Program
**Certificate Program

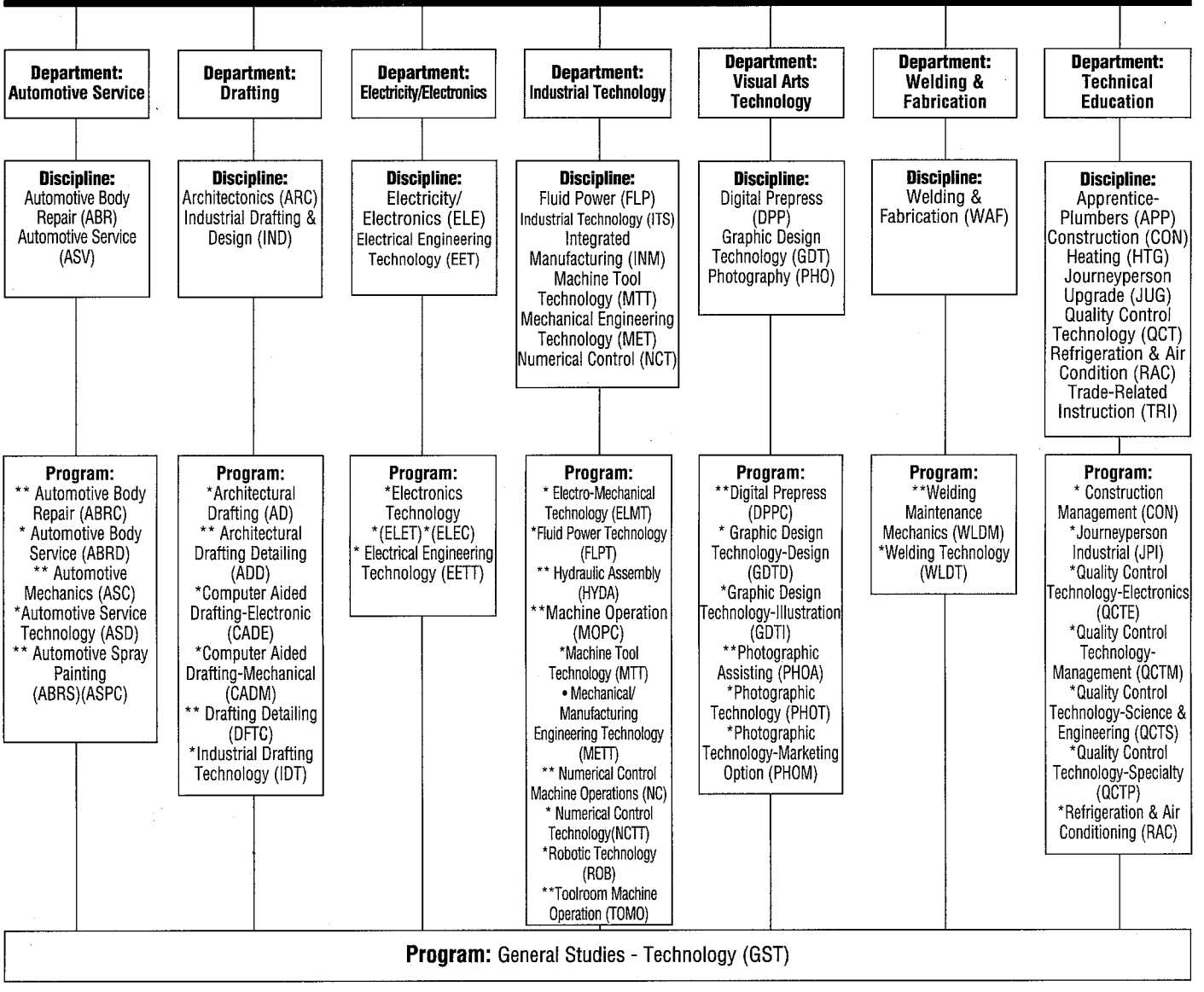


* Degree Program
** Certificate Program



*Degree Program

Division: Technology



* Degree Program
** Certificate Program

Division: Alternative Education

Unit:

Institute for Teaching/Learning Support Services
- Learning Support Services Office
- Tutoring Program
- Services for Students with Learning Disabilities
- Faculty/Student Assessment
- Professional Development

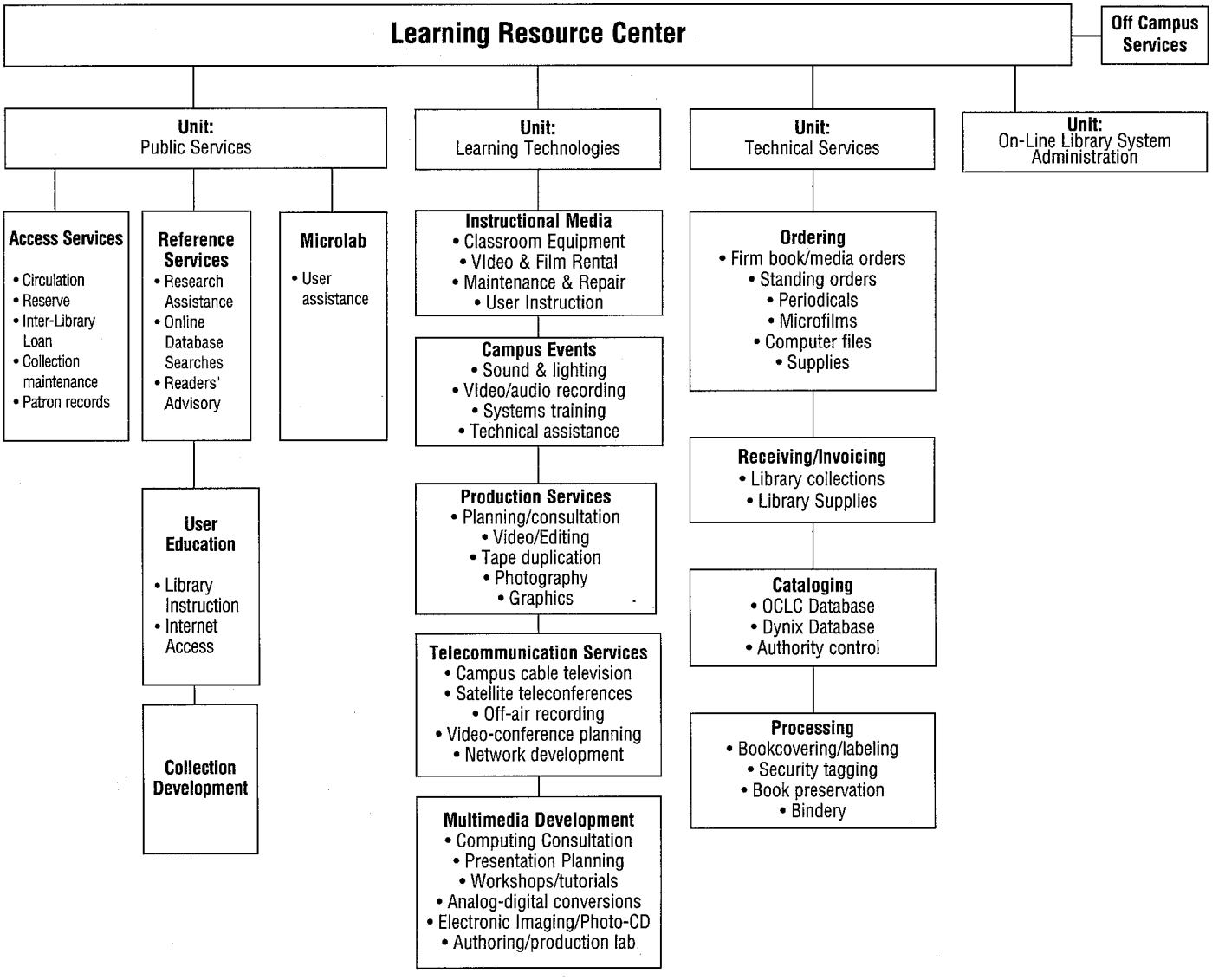
Unit:

Workplace Learning Programs
- Co-op Ed Program
- Academic Service Learning Program
- Internship Program

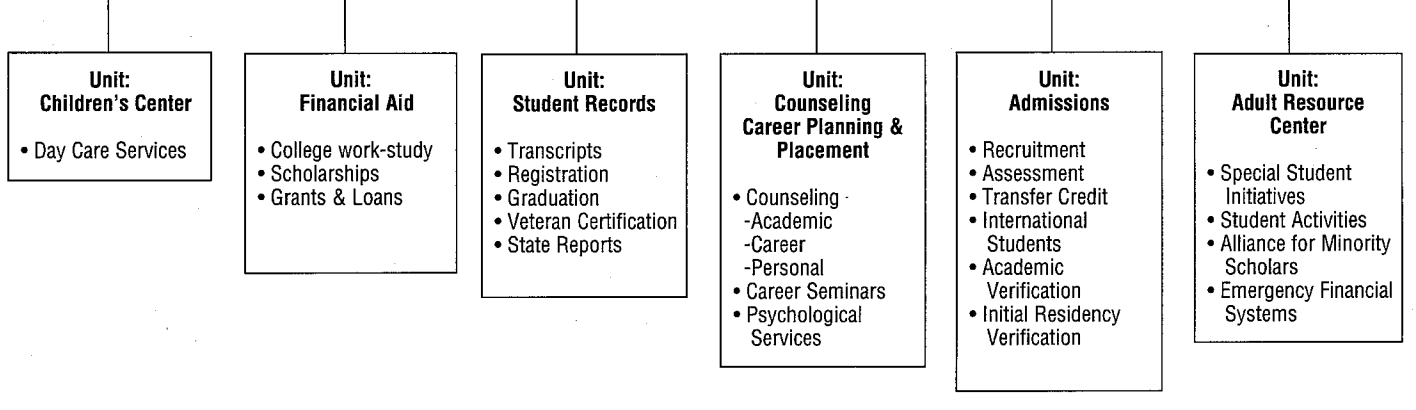
Unit:

Extension Services & Distance Learning Programs
- Regional Centers Credit Programming
- Flexible Learning Program
- Televised Instruction
- Evening/Weekend Degree Programs
- Accelerated Degree Programs

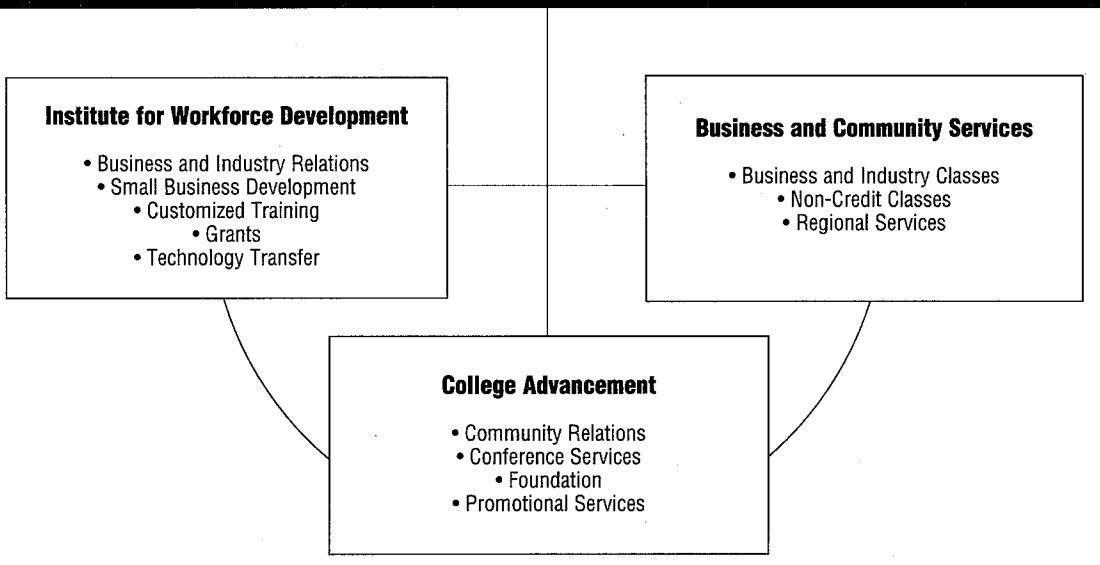
Division: Learning Resources

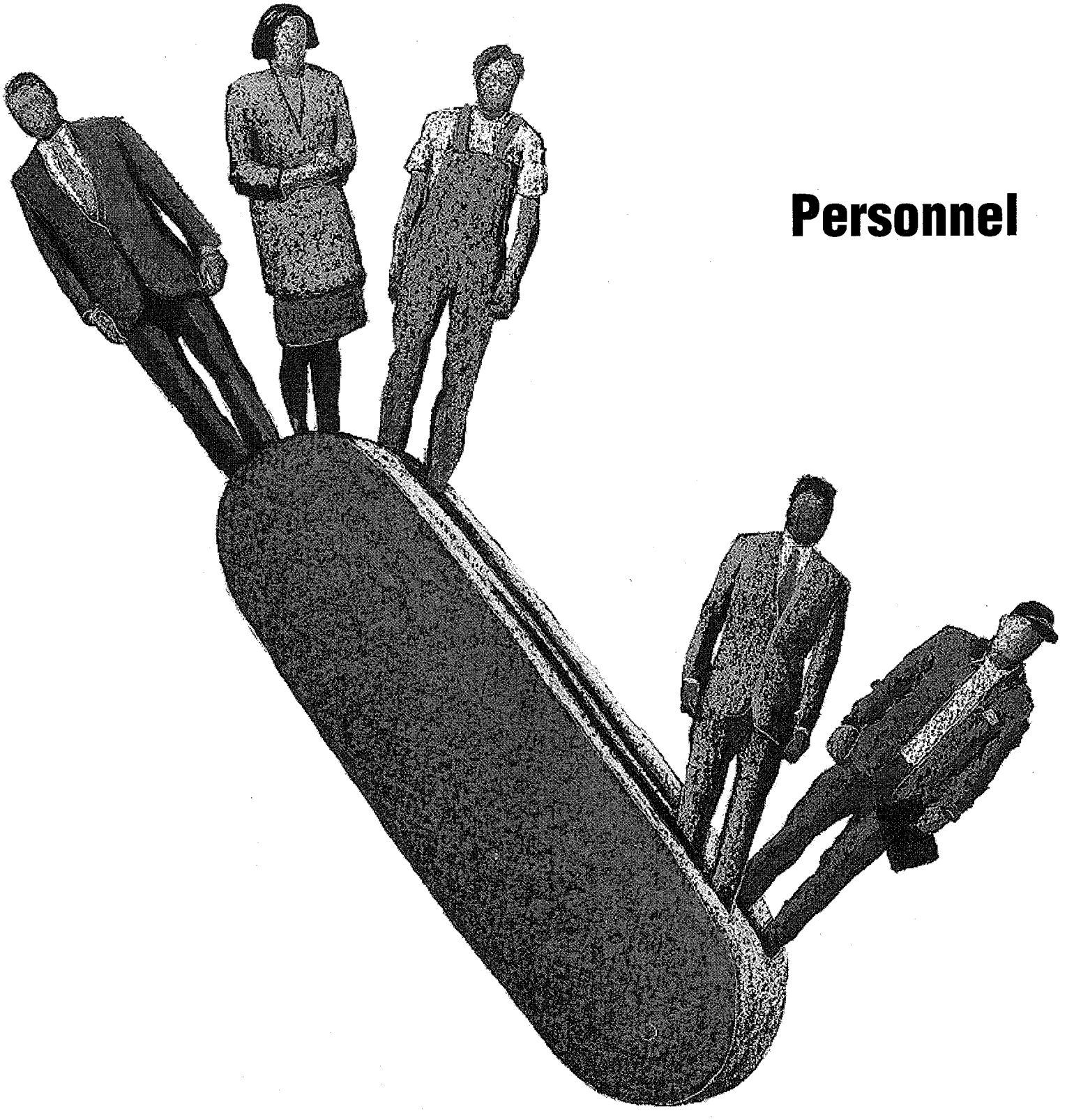


Division: Student Services



Community and Business Relations





Personnel

Board of Trustees

Member	Term Expires
R. Griffith McDonald, Chair Ann Arbor	December 31, 2000
William J. Davis, Jr., Vice Chair Ann Arbor	December 31, 1998
Diana McKnight-Morton, Secretary Ann Arbor	December 31, 2000
Ruth H. Moorman, Treasurer Ypsilanti	December 31, 1998
Richard W. Bailey, Trustee Ann Arbor	December 31, 2002
Harry Konschuh, Trustee Ann Arbor	December 31, 2002
David E. Rutledge, Trustee Ypsilanti	December 31, 2002

Executive Officers

Whitworth, Larry L., President 1998
B.A. - Adrian College
M.B.A. - Duquesne University
Ed.D. - University of Pittsburgh

Altieri, Guy, Vice President of Instruction and Student Services 1987
B.A. - Glassboro State College
M.A. - Glassboro State College
M.A. - West Chester University
M.A. - Columbia University
Ed.D. - Columbia University

Vacant, Vice President of Administration and Finance ..... position vacant

Academic Deans

Bertoia, Roger R. 1966
Dean of Technology
B.S.E. - The University of Michigan
M.S. - The University of Michigan

Blain, Adella M. 1975
Dean of Learning Resources
B.A. - The University of Michigan
M.A.L.S. - The University of Michigan

Galant, Richard L. 1978
Dean of Humanities and Social Sciences
A.B. - The University of Michigan
A.M. - The University of Michigan
Ph.D. - The University of Michigan

Griswold, George 1966
Dean of Math and Natural Sciences
B.A. - College of Wooster
M.S. - Eastern Michigan University

Grzegorczyk, Phyllis 1978
Dean of Health and Public Services
B.S. - The University of Michigan
M.S. - The University of Michigan
S.A. - The University of Michigan
Ph.D. - The University of Michigan

Jacques, Edith N. 1976
Dean of Alternative Education
B.A. - D'Yonville College
M.A. - The University of Michigan
Ph.D. - The University of Michigan

Parker, Bella 1989
Dean of Business
B.S. - St. Augustine College
M.S. - The University of Michigan
Ph.D. - The University of Michigan

Williams, Calvin 1969
Dean of Student Services
A.B.- Western Michigan University
A.M. - The University of Michigan
Ph.D. - The University of Michigan

Many faculty and administrative staff hold specialized certificates and licenses in various areas of expertise. However, only college and university formal degrees are listed.

The date following each name indicates the individual's first full-time employment with Washtenaw Community College.

Faculty and Professional Staff

Abernethy, Bill 1993
Department Chair: Academic Skills
Faculty: English/Writing
B.A. - University of Oregon
M.A. - University of Oregon
Ph.D. - University of Wisconsin

Abrams, Terry 1990
Faculty/Department Chair: Visual Arts
E.D.M. - Boston University
B.F.A. - Maryland Institute College of Art and Design
CERT - Agfa-Gevaert

Adler, Sally 1993
Faculty: Public Service Careers
B.S. - Pennsylvania State University
M.S. - Pennsylvania State University
CERT - PA Dept of Education

Agin, George C. 1968
Faculty/Department Chair: Industrial Technology
B.S. - Wayne State University
M.A. - Eastern Michigan University

Allison, Irelynn M. 1988
Faculty: Business Office Systems
A.D. - Washtenaw Community College
B.B.A. - Eastern Michigan University
M.B.E. - Eastern Michigan University

Amaru, Augustine 1966
Faculty: Social Science
A.B. - Boston University
M.A. - Michigan State University

Anderson, Christine 1997
Webmaster
B.A. - University of Michigan

Anderson, Laurice A. 1998
Faculty: Performing Arts
B.A. - Butler University
M.F.A. - Uninversity of Michigan

Anderson, Scott C. 1998
Distance Learning Program Specialist
A.D. - Mott Community College
B.S. - Eastern Michigan University

Andi, Kimberly M 1995
Health/Public Services Program Coordinator
A.D. - Washtenaw Community College
B.A. - Eastern Michigan University

Andrews, Jacqueline 1984
Director: Institutional Research
B.A. - University of Minnesota
M.A. - Eastern Michigan University
Ph.D. - The University of Michigan

Atkinson, John H 1997
Faculty: Public Service Training
J.D. - Detroit College of Law
M.P.A. - Eastern Michigan University

Avery, Dean 1981
Faculty: Industrial Technology
B.S. - Ferris State College
M.S. - Wayne State 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

Baier, Randal E. 1997
Director: Learning Technologies
B.S. - Vermont State Colleges
M.A. - Wesleyan University
M.I.L.S. - The University of Michigan

Baker, Gerald A. 1975
Faculty/Department Chair: 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. - 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: Foods and Hospitality
B.S. - Eastern Michigan University
M.S. - The University of Michigan

Beaumont, David E. 1990
Coordinator: Special Student Initiatives
B.A. - Eastern Michigan University
M.A. - Eastern Michigan University

Bellers, Clifford 1968
Faculty: Accounting
B.B.A. - Eastern Michigan University
M.A. - Eastern Michigan University

Bellers, Bob 1968
Laboratory Assistant: Electricity/Electronics
A.D. - Washtenaw Community College
LIC - Federal Communications Commission
B.S. - Eastern Michigan University

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

Blakey, Linda S. 1988
Director: Student Records
B.S - The University of Michigan
M.S. - The University of Nevada at Las Vegas

Blodgett, Elizabeth 1979
Other Funds Accountant: Financial Services
B.A. - Wayne State University
M.B.A. - Eastern Michigan University

Bogue, Robert A. 1984
Instructional Lab Assistant – Automotive Services
A.D. - Washtenaw Community College
CERT - State of Michigan
B.S.Ed. - The University of Michigan
Cert - A.S.E.

Bostwick, Phyllis M. 1966
Director: HRD and Support Services
A.A. - Flint Junior College
B.G.S. - Wayne State University

Brandenburg, Elaine M 1997
Database Specialist: Community and Business Relations
B.S. - Michigan State University

Bressler, Allan 1980
Computer Operator II: Information Services

Brown, Bonita 1981
Technician: Security/EMT
EMT Certificate - State of Michigan

Bruenger, John A. 1994
Coordinator, Multimedia Design – Learning Technologies
B.A. - Concordia College
M.A. - Eastern Michigan University

Bundra, Carol 1987
Coordinator: Open Computer Labs/Network
A.D. - Washtenaw Community College

Burgen, Clarence 1997
Manager: Mechanical Systems

Butcher, Kathleen 1989
Faculty/Department Chair: Physical Science
B.S. - St. Mary's College
M.S. - Wayne State University

Bylsma, Donald, Jr. 1966
Faculty: Behavioral Science
B.S. - Wayne State University
M.S. - Wayne State University
Ph.D. - The University of Michigan

Campbell, John 1994
Research Analyst: Institutional Research
B.S. - University of Maine
M.A. - University of Virginia
M.A. - University of Michigan

Chambers, JoAnn 1983
Office Manager/Executive Assistant: Human Resources Management
A.D. - Washtenaw Community College

Charlton, Eleanor 1966
Faculty: Business Office Systems
B.S. - Central Michigan University
M.A. - Central Michigan University

Chisholm, Arnett 1988
Counselor: Counseling, Career Planning and Placement
B.S. - The University of Michigan
M.A. - Eastern Michigan University

Clark, Diana 1989
Counselor: Counseling, Career Planning and Placement
A.D. - Washtenaw Community College
B.S. - Eastern Michigan University
M.A. - Eastern Michigan University

Clark, William G. 1968
Counselor: Counseling, Career Planning and Placement
B.R.E. - Grand Rapids Baptist College
M.A. - Western 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

Coles, Deborah E. 1991
Coordinator: Adult Resource Center
B.S. - Wayne State University

Cox, Cynthia M. 1986
Coordinator: WCC Job Training School
B.S. - Eastern Michigan University
M.A. - Eastern Michigan University

Crean, Patricia K 1996
Director: Customized Training Projects
M.A. - Michigan State University
B.A. - Western Michigan University

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

Crudder, Donna H. 1992
Director: Education/Work Partnership
B.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/Department Chair: Business Office Systems
B.S. - Michigan State University
M.A. - Michigan State University

Cygnar, Patricia 1989
Director: Curriculum and Articulation Services
B.F.A. - University of Illinois
M.Ed. - University of Illinois

Daniels, Cheryl 1990
Employment Specialist: Human Resources Management
A.A. - Schoolcraft College

Davis, Ronald E. 1997
Contract Training Associate
B.A. - Spring Arbor College

DeCamp, JoAnna 1996
Project Manager: Organizational Learning/Thomson - Shore
M.S.W. - 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

DeMerrill, Diane J. 1990
Laboratory Assistant: At Risk/Success

Dick, Roger 1979
Faculty: Industrial Technology
A.S. - Ferris State College
B.S. - Western Michigan University
M.A. - Eastern Michigan University

Dixon, Barton 1995
Security Patrol Officer: Campus Security
A.D. - Washtenaw Community College

Dolan, Michael J. 1993
Module Systems Analyst: Information Systems
B.S. - The University of Washington
B.S. - Wayne State University

Donahey, Jeffrey 1984
Faculty: Industrial Technology
B.S. - The University of Michigan

Downen, Gary W. 1983
Faculty: Electricity/Electronics
B.G.S. - The University of Michigan
M.A. - Eastern Michigan University

Downey, Patrick 1994
Specialist: Conference Services

Dries, Cathie 1989
Director of Conference Services and Community Relations
A.A. - Delta Community College
B.A. - Michigan State University
M.A. - Central Michigan University

Egan, James 1989
Faculty/Department Chair: 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

Ennes, Steven M. 1987
Faculty: Business
A.A.S. - Macomb Community College
B.S. - Western Michigan University

Farrackand, Jamall 1997
Security Patrol Officer: Campus Security
A.D. - Washtenaw Community College

Faulkner, Mary K. 1983
Administrative Assistant to the President
A.D. - Washtenaw Community College

Fauri, Greta 1977
Student Advisor: Children's Center
B.A. - Adrian College

Ferguson, Steven D 1997
Computer Technician: Information Systems
A.D. - Washtenaw Community College

Figg, William 1972
Faculty/Department Chair: Welding and Fabrication
A.D. - Washtenaw Community College

Finkbeiner, Betty Ladley 1969
Faculty/Department Chair: Dental Assisting
A.A. - Grand Rapids Junior College
C.D.A. - Dental Assistance National Board
R.D.A. - Mich State 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

Firsdon, Richard T 1998
Security Patrol Officer
A.A.S. - University of Toledo
Cert - Schoolcraft Community College

Fish, Judith R. 1991
Faculty: Physical Science
B.S. - State University of New York, Albany
M.S. - State University of New York, Albany
Ph.D. - Oakland University

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
B.A. - Eastern Michigan University
M.B.A. - University of Detroit
J.D. - Detroit College of Law

Flowers, Damon 1994
Director of Facilities Development and Operations
B.S. - Lawrence Technological University
M.S. - Central Michigan University

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: Radiography
A.D. - Washtenaw Community College
B.S. - Central Michigan University
M.A. - Eastern Michigan University

Fronczak, Edward J. 1992
Director, Administrative Computer Systems: Information Systems
B.S.E.- The University of Michigan
M.S. - The University of Michigan

Frye, Iota H. 1975
Counselor: Counseling, Career Planning and Placement
B.S. - Eastern Michigan University
M.A. - Eastern Michigan University

Galea, Michael 1998
Faculty: Computer Information Systems
B.S. - Wayne State University
M.A. - Wayne State University

Galvin, Ralph H. 1984
Director: Public Service Training
B.S. - Nazareth College

Garrett, Don L. 1975
Faculty/Department Chair: Foods and Hospitality
A.D. - Washtenaw Community College
Cert - American Culinary Federation
B.S. - Mercy College of Detroit

Gatewood, David 1997
Director: Budget
B.A. - Oregon State University
M.A. - Southern Methodist University
M.B.A. - Southern Methodist University

Gerlitz, Frank 1991
Faculty: Drafting
B.S. - University of Wisconsin
M.S. - University of Wisconsin
Ph.D. - University of Wisconsin

Gessert, Nora J 1997
Coordinator; Student Development: Student Acitivities
B.S. - Eastern Michigan University
M.S.A. - Central Michigan University

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

Glass, Michael K. 1991
Student Advisor: Counseling, Career Planning and Placement
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. 1992
Supervisor: Clerical Services

Goldberg, David 1977
Faculty: Mathematics
B.S. - The University of Michigan

Golembieski, Thomas F. 1997
Supervisor: Campus Security Services
M.A. - Central Michigan University
B.S. - Madonna College

Goodkin, Barbara H. 1975
Faculty: Nursing
B.S.N. - The University of Michigan
M.S. - The University of Michigan

Gordon, Anaruth 1997
Coordinator, Enrollment Technology: Admissions
B.A. - Wayne State University
M.A.T. - Oakland University
Ph.D. - University of Michigan

Gracie, Cheryl D. 1989
Faculty/Department Chair: Business
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
Faculty: Student Activities
B.A. - University of Michigan
M.A. - University of Michigan

Greenman, Carole L. 1996
Specialist: Conference Services
B.S. - Eastern Michigan University

Grimes, William L. 1991
Faculty: Business
B.A. - University of Southern California
M.A. - The University of Michigan
M.B.A. - University of California - L.A.

Grossman, Esta 1975
Faculty: Life Sciences
B.A. - Pembroke College in Brown University
M.A. - The City College 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

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

Gyuk, Drin S. 1998
Micro Lab Supervisor/Technician: Learning Resource Center
A.B. - University of Virginia
M.S.O.E. - University of Michigan

Hagen, Laura A. 1997
Facilities Planner
B.A.R.C.H. - Virginia Polytechnic Institute
Lic - Board of Architects

Haglund, Richard 1987
Campus Security Officer

Hagood, Robert M. 1997
Faculty: 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
Microcomp Hardware Support Specialist: Information Systems
A.D. - Washtenaw Community College

Hammond, Linda.....1987
Project Manager: Institute for Workforce Development
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

Harris, Sally D. 1981
Associate Professional Counselor: Adult Resource Center
A.D. - Washtenaw Community College
B.A. - Concordia College
M.A. - Eastern Michigan University

Hatcher, Ruth.....1981
Faculty/Department Chair: English/Writing
A.B. - Earlham College
M.A. - The University of Michigan

Hawkins, Janet L. 1977
Coordinator, Public Information: Promotional Services
A.D. - Washtenaw Community College
B.B.A. - Eastern Michigan University

Heator, Martin G. 1985
Director: Promotional Services
B.S. - Eastern Michigan University
M. A. - Eastern Michigan University

Heidebrink, Gregg S......1995
Faculty: Social Science
B.A. - Iowa State University
M.A. - Southern Methodist University

Heise, Anne E. 1993
Faculty: Life Sciences
B.A. - Swarthmore College
M.S. - University of Vermont

Hemsteger, Thomas.....1992
Faculty: Automotive Services
A.A.S.- Ferris State University
B.S. - Eastern Michigan University
M.A. - Eastern Michigan University

Henry, Mioshia D......1994
Manager: Custodial Services
A.D. - Washtenaw Community College

Hill, Birgitte.....1986
Accountant for Cash Management: Financial Services
B.A. - The University of Michigan
CCM - Treasury Management Association

Hinds, Dwight D. 1968
Faculty: Physical Science
B.S. - Eastern Michigan University
M.S. - Michigan State University

Holmes, Nan.....1995
Faculty: Behavioral Sciences
A.B. - Bryn Mawr
M.A. - Bryn Mawr
Ph.D. - Bryn Mawr

Holmes, William H......1990
Executive Director: Community and Business Relations
B.A. - West Virginia Wesleyan College
M.Div. - Methodist Theological School

Hommel, Judith C......1992
Annual Fund Coordinator: WCC Foundation
A.A. - Cottey Jr. College
B.S. - University of Oklahoma
B.F.A. - Eastern Michigan University

Horne, Beth.....1997
Laboratory Assistant: Foods & Hospitality
A.A.B. - University of Toledo
Cert - 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

Hoth, Bradley.....1987
Student Advisor: Admissions
A.A. - Henry Ford Community College
B.A. - Michigan State University
M.A. - Eastern Michigan University

Howdyshell, Linda A......1993
Director: Planning and Governance
B.S. - Central Michigan University
M.A. - Central Michigan University
Ph.D. - Michigan State University

Hower, Guy W. 1966
Director: Financial Aid
B.B.A. - The University of Michigan
M.A. - The University of Michigan

Hughes, Patrick E......1998
Network Engineer: Information Systems
B.S. - Madonna College
A.S. - Henry Ford Community 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

James, William E. 1994
Faculty: English/Writing
B.A. - The University of Michigan
M.A. - Wayne State University

Jefferson, LaRuth E. 1974
Faculty: Academic Skills
B.S. - Shaw College at Detroit
G.S. - The University of Michigan
E.F.D.A. - Indiana University
M.A. - The University of Michigan
C.D.A. - American Dental Association
R.D.A. - MI State Board of Dentistry

Jett, Sukanya J. 1992
International Student Specialist: Admissions
A.A. - Cottey College
B.A. - Radford University

Jindal, Usha R. 1982
Faculty: Computer Information Systems
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

Johnson, Claudia Sullens 1984
Clinical Instructor: Dental Assisting
A.D. - Washtenaw Community College
C.D.A. - American Dent Asst Assoc
R.D.A. - MI State Board of Dentistry
B.S. - Madonna College

Johnson, Nina M 1997
Recruitment/ Human Resources Coordinator
A.B. - University of Michigan
M.S. - Central Michigan University

Johnston, John P. 1996
Coordinator of Media Services: Learning Technologies
B.S. - Eastern Michigan University

Johnston, Mark 1990
Faculty/Department Chair: Accounting
B.B.A. - Eastern Michigan University
M.S. - Walsh College

Jones, Katherine 1992
Director: Applied Technology
B.F.A. - Denison University

Jordan, Cole L. 1978
Director: Employment and Human Resource Development
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
Microcomp Software Support Specialist
A.D. - Washtenaw Community College

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

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/Department Chair: Humanities
B.A. - Mount Holyoke College
M.A. - The University of Michigan
Ph.D. - The University of Michigan

King, Linda 1998
Interim Director: Job Skills Academy
A.B. - University of Michigan
A.M. - University of Michigan

King, Richard 1998
Regional Director: Michigan Small Business Development Ctr.
A.B. - Lawrence University
MBA - Dartmouth

Kinney, Nancy 1994
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

Klohs, Emilie S. 1997
Microcomp Software Supp Specialist: Information Systems

Kollen, Michael 1969
Faculty/Department Chair: Behavioral Sciences
B.A. - Knox College
M.S. - New Mexico Highlands University
M.A. - The University of Michigan

Komarmy, Tracy L. 1993
Faculty/Chair: Performing Arts
B.S. - Eastern Michigan University
M.A. - Eastern Michigan University

Kramer, Lawrence 1977
Faculty: Electricity/Electronics
B.S.E.E. - The University of Michigan

Krantz - Fischer, Carrie 1992
Faculty: English/Writing
B.S.- Edinboro University Pennsylvania
M.A.- Bowling Green State University

Krieg, Laurence J. 1983
Faculty: Computer Information Systems
B.A. - College of Wooster
M.A. - The University of Michigan
Ph.D. - The University of Michigan

Ladha, Aminmohamed J. 1995
Network Systems Manager: Information Systems
B.S. - Eastern Michigan University
M.L.S. - Eastern Michigan University

LaHote, Randy 1992
Faculty/Chair: Social Science
B.A. - University of Toledo
M.A. - University of Toledo

Laycock, Angelina 1991
Director: Workplace Learning Center
B.S. - Eastern Michigan University
M.S. - Eastern Michigan University

Lee, Arthur A. 1984
Faculty: Mathematics
B.A. - Aquinas College
M.A. - The University of Michigan

Lee, Granville W. 1990
Faculty: Business
B.S. - New York University
M.B.A. - University of Dayton

Lee, Michael N. 1998
Computer Technician: Computer Information Systems Department
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

LePere, Andrew J. 1993
Coordinator: Admissions and Student Records
A.B. - The University of Michigan
M.S. - Eastern Michigan University

Levy, Mary L. 1981
Module Systems Analyst: Information Systems
B.A. - College of Wooster
M.A. - The University of Michigan

Lippens, Joan 1993
Faculty: Academic Skills
B.A. - Queen's University, Kingston
B. Ed - Queen's University, Kingston
M.A. - Eastern Michigan University

Little, Patrick J. 1986
Director: Campus Security Services
A.D. - Washtenaw Community College
B.A. - Concordia College
Lic - State of Michigan
Graduate – FBI National Academy

Liu, Victor 1991
Coordinator: Technical Services LRC
B.A. - University of South Carolina
M.A. - Michigan State University
M.I.L.S. - The University of Michigan

Lockard, Jon M. 1970
Faculty: Humanities

Longino, Charlene 1994
Director: Children's Center
B.A. - Northern Illinois University
M.A. - Eastern Michigan University

Lowe, Burton C. 1968
Faculty: Industrial Technology

Lu, Yin 1994
Faculty: Mathematics
B.S. - National Taiwan University
M.S. - National Taiwan Normal University
Ph.D. - State University of New York, Buffalo

Lutz, Geoffrey A. 1986
Module Systems Analyst: Information Systems
B.S. - The University of Michigan

MacDonald, Janet G. 1967
Faculty: Mathematics
B.A. - The University of Michigan
M.A. - Cornell University

Mann, John B. 1971
Faculty: Automotive Service
B.S. - Eastern Michigan University
M.A. - The University of Michigan
A.S.E. - National Auto Technical Certification

Mattingly, Lenae D. 1997
Benefits/Compensation Associate: Human Resources Management
B.A. - Michigan State University

McDonald, Michelle M 1997
Coordinator: Tech Prep
B.A.- University of Pittsburgh
M.A.- University of Michigan

McGill, John B. 1966
Faculty: Mathematics
B.S. - Eastern Michigan University

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: Foods and Hospitality
B.A. - Madonna College
M.S.A. - Central Michigan University

Meade, Roland 1990
Faculty/Chair: Computer Information Systems
B.S. - Northern Michigan University
M.A. - Western Michigan University
Ph.D. - Western Michigan University

Miin, Jong-Mann P. 1998
Database Analyst: Information Systems
B.S.- FuJen University
M.S.- Eastern Michigan University

Miller, Jean 1989
Faculty: English/Writing
B.A. - Marygrove College
M.A. - University of Tulsa

Minock, Daniel W. 1983
Faculty: English/Writing
A.B. - University of Detroit
M.A. - University of Detroit
Ph.D. - Ohio State University

Moorman, Franci H. 1992
Program Specialist: Learning Support Services
B.S. - Virginia State University
M.A. - Eastern Michigan University
Ed.Sp. - Eastern Michigan University
Ph.D. - University of Michigan

Morita, Joseph 1998
Interim Microcomp Hardware Support Specialist

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
Interim Executive Director: Information Systems
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
Payroll Supervisor: Financial Services

Mullins, Philip G. 1982
Faculty: Electricity/Electronics
A.D. - Washtenaw Community College

Murphy, Vivian A. 1993
Faculty/Department Chair: Pharmacy and Surgical Technology
A.S. - Clark State College
B.S. - Oakland University

Murray, Nancy J. 1983
Contract Training Associate

Naylor, Michael L. 1994
Faculty/Department Chair: Performing Arts
B.M. - The University of Miami
M.M. - The University of Miami
M.A. - The University of Michigan
Ph.D. - University of Michigan

Nelson, William H. 1992
Clinical Instructor: 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

Norwood, Mimi Y. 1993
Faculty/Department Chair: Respiratory Therapy
A.D. - Washtenaw Community College
B.S. - Wayne State University
M.S.W. - The University of Michigan
M.A. - Morehead State University

Ong, Boon Neo Julianna 1992
Module Systems Analyst: Information Systems
B.B.A. - Eastern Michigan University
M.B.A. - Eastern Michigan University

O'Rear, Katherine 1988
Faculty: English/Writing
B.A. - Washington State University
M.A. - Eastern Michigan University

Ortega-Trudel, Maria 1992
Faculty: Behavioral Sciences
B.S. - Central Michigan University
M.A. - Michigan State University

Palay, Roger M. 1975
Faculty: Mathematics
B.S. - University of Chicago
M.S. - University of Wisconsin

Pauris, Jr., Jean-Claude 1997
Security Patrol Officer

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: Technology Administration
A.D. - Washtenaw Community College
A.D. - Washtenaw Community College

Perez, Laura 1993
Faculty: Mathematics
B.S. - Bowling Green State University
M.A. - Bowling Green State University

Peters-Golden, Holly 1998
Faculty: Social Science
A.B. - Franklin and Marshall College
M.A. - University of North Carolina
Ph.D. - University of North Carolina

Peterson, Michele L. 1997
Faculty: Social Science
B.S. - Washington and Jefferson College
M.A. - The University of Pittsburgh
Ph.D. - The University of Pittsburgh

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: Reprographics
A.D. - Washtenaw Community College
B.B.A. - Eastern Michigan University

Pierce, L. E. 1984
Director: Technical Job Training Programs
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
M.A. - Siena Heights College

Placey, David 1992
Director: Admissions
B.A. - The University of Michigan
M.A. - Eastern Michigan University

Pobursky, Joel E. 1993
Campus Safety Officer: Campus Security Services
A.D. - Washtenaw Community College

Pogliano, Michael F. 1969
Faculty/Department Chair: Drafting
B.Arch. - The University of Michigan

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

Redick, Martin 1978
Faculty: Respiratory Therapy
B.S. - The University of Michigan
M.S. - The University of Michigan

Redondo, Juan C. 1994
Faculty: Humanities
M.A. - University Complutense - Madrid
M.A. - University of California at Berkeley
M.A. - The University of Wisconsin

Reeves, Robert A. 1968
Associate Vice President: Human Resource Management
B.A. - Eastern Michigan University
M.A. - Eastern Michigan University

Reiter, Susan 1991
Director: Teaching and Learning Support Services
B.A. - University of Michigan
M.A. - University of Minnesota
Ph.D. - The University of Michigan

Remen, Janet M. 1982
Faculty: Mathematics
Department Chair: Computer Information Systems
B.Sc. - University of Durham
M.S. - The University of Michigan

Rice, Sheila J. 1997
Coordinator of Access Services: Learning Resource Center
A.M.L.S. - The University of Michigan
B.A. - The University of Michigan

Rinke, John 1992
Director of 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

Rinn, Kim M. 1984
Systems Development Manager: Information Systems
A.Commerce - Henry Ford Community College
B.B.A. - Eastern Michigan University
M.S. - Eastern Michigan University

Ripepe, Suzette D. 1997
Faculty: Pharmacy Technology
Regis - Board of Pharmacy
B.S. - Ferris State University
M.S. - Wayne State University
J.D. - Wayne State University

Roberts, Alvin 1968
Faculty: Behavioral Sciences
B.S. - Prairie View AM University
M.S.W. - Wayne State University

Robinson, Todd 1996
Supervisor: Custodial Services

Rose, Barbara C. 1997
Educational Services Specialist
B.A. - Southern Connecticut State College

Schultz, Gary L. 1984
Faculty: Industrial Technology
A.D. - Washtenaw Community College
B.S. - Eastern Michigan University
M.S. - Eastern Michigan University

Schuster, William 1989
Faculty/Department Chair: 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

Shah, Paresh M. 1998
Certified Network Administrator: Information Systems
C.N.A. - Novell
A.B. - Augustana College

Shier, David 1990
Faculty/Department Chair: Life Sciences
B.S. - Cornell University
Ph.D. - The University of Michigan

Shoemaker, Jeffrey A. 1997
Security Patrol Officer: Campus Security Services
A.A.S - Ferris State University

Showalter, Martha 1980
Faculty: Mathematics
B.S. - Ohio State University
B.A. - Ohio State University
M.Ed. - University of Houston

Siehl, Chris 1995
Faculty: Behavioral Sciences
B.A. - Wittenburg University
M.A. - Northwestern University
M.S.W. - Michigan State University

Sinclair, Starlett 1992
Director of Compensation/Benefits: Human Resources Management
B.S. - Wayne State University

Stadtfeld, Kathleen A. 1982
Director: Educational Services
B.S. - Eastern Michigan University
M.A. - Eastern Michigan University

Stanford, Adrian 1987
Student Advisor: Admissions
B.S. - Eastern Michigan University

Stegall, 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

Stevenson, Kathleen M. 1987
Human Resource Specialist
A.D. - Washtenaw Community College

Stotz, Daniel 1991
Director of Marketing
B.B.A.- Eastern Michigan University
M.S. - Colorado State University

Straub, Cynthia A. 1993
Coordinator of Program Development Services: Curriculum and Articulation Services
B.A. - Ohio State University
M.A. - Ohio State University
Ph.D. - Ohio State University

Strayer, Ross 1989
Faculty: Life Sciences
B.S. - Eastern Michigan University
M.S. - Eastern Michigan University

Susnick, Stuart B. 1969
Faculty/Department Chair: 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
Manager: Extension Services and Distance Learning
B.A. - Eastern Michigan University
M.A. - Eastern Michigan University

Talley, Dana L. 1993
Associate: Human Resources Management

Tanguay-Hoover, Julie 1994
Graphic Services Coordinator: Promotional Services
B.A. - Center for Creative Studies

Teevens, James 1989
Faculty: Drafting
A.A.S. - Schoolcraft College
B.Arch. - University of Detroit
M.Ind.Ed. - Eastern Michigan University

Tew, Bonnie E. 1994
Faculty: Humanities
A.A. - Kellogg Community College
B.S. - Eastern Michigan University
M.A. - Eastern Michigan University

Thoburn, Elisabeth 1995
Faculty: Humanities
B.A. - 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, Julianne 1997
Contract Training Associate
B.A. - Alma College

Thomas, Martin 1995
Manager: Plant 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 Technical 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/Department Chair: Electricity/Electronics
B.S. - University of Houston
M.S. - University of Houston
Sp.A. - Eastern Michigan University

Trapp, Lori J. 1996
Specialist: Financial Aid
B.A. - Michigan State University

Trosche, Diane J. 1997
Student Services Advisor: Counselor and Career Planning
B.A. - Concordia College
M.A. - Eastern Michigan University

Turner, Spring J. 1997
Contract Training Associate: Extension Services
Distance Learning
B.B.A. - Cleary College
M.A. - Marygrove College

VanderVeen, Sister Judith 1976
Faculty: Nursing
S.A. - Wayne State University
S.A. - University of Michigan
Diploma - Mercy Central School of Nursing
REGIS - State of Michigan
B.S.N. - Mercy College of Detroit
M.A. - The University of Michigan

VanGenderen, Gary L. 1982
Faculty: Physical Sciences
B.S. - The University of Michigan
M.S. - Eastern Michigan University

Vaughn Walker, Debra D. 1990
Specialist: Adult Resource Center
B.A. - Concordia College

Velarde, Gloria A. 1990
FacultyDepartment Chair: Nursing
B.S.N. - Eastern Michigan University
M.S.N. - Wayne State University

Wagner, Catherine W. 1992
Faculty: Electricity/Electronics
E.E.T. - USAF Cryptographic School
B.S. - The University of Michigan
M.S. - The University of Michigan

Wagner, Robin L. 1995
Financial Systems Analyst: Financial Services
B.A. - Siena Heights College

Wagner, Sandra L. 1997
User Support Specialist: Information Systems
Cert - Washtenaw Community College
Cert - Brockton Institute

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

Warner, Elizabeth 1988
Faculty: Academic Skills
B.A. - The University of Michigan
M.A. - San Francisco State University

Warsinske, Thomas G. 1998
Sr UNIX System Administrator: Information Systems
B.S. - University of Michigan
B.S. - Eastern Michigan University

Webster, Brenda J. 1987
Clinical Instructor: Nursing
B.S. - The University of Michigan

Wegrzyn, Nancy D. 1997
Purchasing Coordinator/Buyer
B.S. - Eastern Michigan University

Weidner, Hal R. 1969
Faculty: English/Writing
A.D. - Washtenaw Community College
A.B. - Columbia College
M.A. - The University of Michigan
Ph.D. - The University of Michigan

Welch, Daniel J. 1997
Distance Learning Instructional Design - Learning Technologies
B.A. - University of Detroit
M.Ed - Wayne State University

Wenger, Valerie S. 1994
Specialist, Administration and Finance
A.D. - Washtenaw Community College
A.A.S. - Washtenaw Community College

Westcott, Richard 1984
Manager: Grounds

Westrick, James H. 1997
Supervisor: Campus Security Services
Certificate - Northwestern University

Wilkins, Barry L. 1982
Assistant Director: Facilities Management
A.D. - Washtenaw Community College

Williams, Cheryl O. 1995
Student Services Advisor: Workplace Learning Center
B.S. - University of Delaware
M.S. - Florida State University

Wilson, Charles 1997
Facilities Project Coordinator: Facilities Management

Wilson, Rosemary 1986
Faculty: Business
B.S. - Milligan College
M.B.A. - University of Notre Dame

Wirbel, Johanna V. 1968
Faculty: Mathematics
B.A. - Kent State University
M.A. - The University of Michigan
A.M. - The University of Michigan

Woehlke, Laura A. 1993
Director of Purchasing and Auxiliary Services:
Budget and Purchasing
A.D. - Davenport College of Business
B.S. - Aquinas College
M.S. - Ferris State University

Wojnowski, Judith L. 1978
Controller: Financial Services
B.S. - Canisius College
C.P.A. - State of Michigan

Wood, John D. 1984
Student Advisor: Career Development
B.S. - Michigan State University

Worrell, Sandra M. 1998
Student Services Advisor: Workplace Learning Center
B.S. - New York State University
M.Ed. - Northeastern University

Wurster, Allen J. 1995
Associate: Testing Center
A.D. - Washtenaw Community College

Young, Colette 1987
Faculty: Business
B.A. - Michigan State University
M.A. - Michigan State University

Young, Mary E. 1975
Counselor: Counseling, Career Planning and Placement
B.R.E. - Detroit Bible College
B.A. - Eastern Kentucky University
M.A. - Eastern Kentucky University

Zaremba, Ernest 1969
Faculty: Behavioral Sciences
B.A. - The University of Michigan
M.A. - The University of Michigan
Ph.D. - The University of Michigan

Zeeb, Ronald E. 1968
Faculty: Business
B.S. - Eastern Michigan University
M.A. - Eastern Michigan University

The following is a list of retired WCC faculty who have been awarded emeritus teaching status and have taught during the last two years.

Emeritus Teaching Faculty 1996-98

Devereaux, William T. ..... Speech
B.A. - Michigan State University
M.A. - Michigan State University
Ed.D. - Laurence University

Hanson, Charlotte ..... Speech
A.B. - The University of Michigan
M.A. - The University of Michigan

Knoll, Gladys ..... Nursing
Diploma - Henry Ford Hospital School
B.S.N. - The University of Michigan
M.S. - The University of Michigan

Kokkales, Paul C. ..... Accounting
B.S. - Eastern Michigan University
M.A. - The University of Michigan

Martin, Herbert ..... Psychology
B.A. - Eastern Michigan University
M.A. - Eastern Michigan University
M.S.W. - The University of Michigan

McGee, Sophie ..... Reading
B.A. - The University of Michigan
M.A. - The University of Michigan
Ph.D. - Michigan State University

Mickelson Gaughan, Joan ..... Social Science
B.A. - St. Theresa College
M.A. - Eastern Michigan University
Ph.D. - The University of Michigan

Mitchell, W. Bede ..... English
A.B. - Wayne State University
M.A. - Wayne State University

Nelson, Robert ..... Radiography
A.A. - Fort Scott Community Junior College
A.D. - Washtenaw Community College
B.S. Ed. - The University of Michigan
M.S. - The University of Michigan

Niehaus, Paul ..... Life Sciences
B.A. - Eastern Michigan University
M.S. - The University of Michigan

Paup, Arlene M. ..... Computer Info Sys
B.S. - Temple University
M.S. - Drexel University

Reps, Flavia ..... Social Science
B.A. - St. Joseph College
M.A. - Georgetown University

Thomas, Ervin ..... Social Science
B.A. - Wayne State University
M.A. - Wayne State University

Zenian, Paul ..... Humanities
B.S. -The University of Michigan
M.F.A. - The University of Michigan

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 1998-1999

Academic Skills Advisory Committee

Dale Brethower	Western Michigan University
Margaret Collinge	St. Joseph Mercy Hospital
Stephen Engle	Hostess Cake
Gil Gilden	Eastern Michigan University
Don Grogan	Defense Contract Audit Agency
Jane Heineken	Student, Washtenaw Community College
Geraldine Markel, Ph.D	University of Michigan
Joey Massengale	Pioneer High School
Ann McKee	University of Michigan
Pat McQuarrie, Ph.D	Washtenaw Intermediate School District
Rosemarie Nagel	Emeritus Faculty, Washtenaw Community College
Olga Nelson, Ph.D	Eastern Michigan University
Deborah Rumple	University Microfilms Inc.
Tonya Sparrow	Student, Washtenaw Community College
Scott Stark	Student, Washtenaw Community College
Laurie Walker	Eastern Michigan University
Rowena Wilhelm, Ph.D	University of Michigan
Leslie Williams	Eastern Michigan University

Accounting Advisory Committee

Ann Black	Arthur Anderson & Company
Crystal Davidson	Applied Intelligent Systems, Inc.
Kathy Herbert, CMA	Applied Intelligent Systems, Inc.
Tonyu Rizzardi	Internal Revenue Service
Steve Schneider, CPA	St. John Raham Weidmayer
Judy Walker	Ann Arbor Chamber of Commerce
Alan Young, CPA	Alan Young & Associates

Architectonics Advisory Committee

Glenn Brightman	Student, Washtenaw Community College
Dan Foren	Student, Washtenaw Community College
John Hinkley	Hobbs & Black Associates Inc.
Edward Kelly	Kelly Tinker Architects
Hardy Richardson	Student, Washtenaw Community College
Kirk Waterbury	University of Michigan

Assessors Education Advisory Committee

Majorie Bixby	Washtenaw County Assessor
Colleen Brooke	Personal Computer Training for Business
Carole Claire	City of Ypsilanti Assessor
Bob Lupi	Ford World Headquarters
Jim Rushton	City of Ann Arbor Assessor
Dick Steffans	Washtenaw County Equalization
Dwight Sunday	Ypsilanti Township Assessor

Auto-Body Repair Services Advisory Committee

Mike Blosser	Huron High School
Bill Burnette	Regional Career Tech Center
Scott Heim	William D. Ford Career Tech Center
Jerry Johns	Ross-Beakes Collision Service
Joel Posegay	Precision Collision
Anthony Tally	Auto-Body Art

Business Management Advisory Committee

Kathleen Boyle	Center for Employment and Economic Development
Sara Ford	Jones Insurance
Paul Ganz	MichCon
Joyce Girdis	Xycom
Sylvia Gucken	Ideal Steel
Pan Irish	Student, Washtenaw Community College
Larry Oakes	Care Choices Senior
Michelle Richards	Entrepreneur Development Fund
Donna Shirilla	Washtenaw Development Council
Sherri Swanson	NSK Corporation

Business Office Systems Advisory Committee

Diane Benson	Manpower Temporary Services
Stephanie Bowens	University of Michigan Hospitals
Lou Campos	Great Lakes National Bank
Michelle Gilbert	Parke-Davis Pharmaceutical Research Division
Stacy Knox	Wolverine Temporary Inc.
Lori Moizio	University of Michigan
Shirley Mullen	University of Michigan
Sandi Schulze	Catherine McAuley Health System
Renee Silverthorn	Parke-Davis Pharmaceutical Research Division
Charlotte Stewart	Ann Arbor Police Department
Barbara Tebbutt	Ann Arbor Public Schools
Robert Trevino	Ford Motor Company
Darcelle White	Eastern Michigan University

Child Care Advisory Committee

Ellie Banyai	Baby Book Club
Jessie Bradley	Washtenaw County Head Start
Flo Burke	Child Care Network
Debi Freeman	Washtenaw Community College Children's Center
Leslie Fry	Child Care Connection and Honey Creek School
Liz Galimore	Saline Area Schools
Kelli Heliker	Tutor Time Child Care
Char Longino	Washtenaw Community College Children Center
Cheryl Mitchell	Genesis Academy

Gretchen Preston	Gretchen's House Child Care
Denise Wiley	Open Door Child Care
Judy Williston	Eastern Michigan University
Kathleen Wright	Kat's Cradle

Computer Information Systems Advisory Committee

Daniel Bethuy	Booth Computer Division
Cyndy Bylsma	ReCellular, Inc.
Alahassane Diallo	Eastern Michigan University
Peter Gray	Arbor Partners
Mark Larson	McAuley Health Care Mercy Information Systems
Pat Schumaker	Schumaker & Co.
Rao Tummala	Eastern Michigan University
Dan Waltz	Chelsea Hospital

Construction Code Advisory Committee

John Barrie	Architect, John Barrie Associates
Sue Dodson	Building Official, Sterling Heights
Jack Donaldson	DJD Associates
Harry Hutchinson	Building Official, City of Ypsilanti
Tom Miller	Building Official, Washtenaw County
Larry Pickel	Building Official, City of Ann Arbor
Jack Williams	Building and Zoning Administrator, Pittsfield Township

Corrections Advisory Committee

Peggy Bourne	Adrian Temporary Facility
Andrew Jackson	Huron Valley Men's Correctional Facility
Michael Johnson	Washtenaw County Sheriff's Office
Joseph J. Gonzalez, M.S.W.	Michigan Department of Corrections
Pam Ronci	Former Washtenaw Community College Student, Community Representative

Culinary and Hospitality Management Committee

David Balla	Gandy Dancer Restaurant
Jim Bitzinger	Student, Washtenaw Community College
Andy Dahlmann	Bell Tower Hotel
Sandee French	Cady's Grill
Scott Joling	Grizzly Peak Brew Pub
Bob Hacker	Comfort Inn
Kim Hawkins	Crown Plaza Hotel
Mark Johnson	Outback Steakhouse
Virginia Kingsley	Ypsilanti Convention & Visitors Bureau
John Lucas	Ypslanti Marriott
Tim Patino	Real Seafood Company/Main Street Ventures
Tom Recinella	University of Michigan Stockwell Hall
Dave Rensi	Cousins Heritage Inn
Dave Serino	Ann Arbor Convention & Visitors Bureau
Scott Storbeck	Tecumseh Country Club
Jerri Williams	Student, Washtenaw Community College

Dental Assistant Advisory Committee

Robert Bagramian, DDS	University of Michigan
Daniel H. Cox, DDS	Private Practice
John Fleszar, DDS	Private Practice
Carola Gerigh, DDS	Private Practice
Jed Jacobson, DDS	University of Michigan
Holly Potter, CDA, RDA	Richard Charlick, DDS
Thomas A. Slade, DDS, PC	Private Practice
Carl T. Woolley, DDS	Private Practice

Digital Prepress Advisory Committee

Arie Covrigaru	FullServ Inc.
Jeff Kause	McNaughton-Gunn
Roger Mateer	Braun-Brumfield, Inc.
John Murrel	Malloy Lithographing
Michale Northrup	Huron High School
Clara Trent	Allegra Print and Imaging
Christina White	MedStat Group
Tim Wicks	White Pine Printers, Inc.

Graphic Design Advisory Committee

Susan Gardner	Gardner Communication
Christine Golus	Q Limited
Laura Herold	Wagner Design
David Murrel	University of Michigan
Nancy Yonkin	O'Briens Agency

Human Services Advisory Committee

Charles Kieffer, Ph.D	SOS Crisis Center
Linda King	Washtenaw Community College, Job Skills Academy
Donald M. Leppnow, Ph.D	Eastern Michigan University
James E. Pendorf, Ph.D	Veteran's Administration Medical Center
Kathleen Reynolds	Community Mental Health
Nancy Riley	Washtenaw County/City of Ann Arbor Community Corrections
Bethany Smith	Student, Washtenaw Community College
Marvin Taurianen	Washtenaw Council on Alcoholism
Marjorie Ziefert	Eastern Michigan University

Industrial Technology Advisory Committee

Dave Braun	Ford Motor Company
Tim Cornelius	R & B Machine Tool Company
Gus Stager	S–3 Engineering
David Miller	Private Practice
Joe Miller	Servo Kinetics
Mike Walter	Gelman Sciences

Nursing Advisory Committee

Ruth Churley-Strom	St. Joseph Hospital
Jean Eiler	HGS Home Care
Claudia Moore, Ph.D.	University of Michigan, School of Nursing
Joyce Sodergren, RN	Veteran's Administration Medical Center

Pharmacy Technology Committee

Jamie Curry	McKesson Pharmacy Systems
Dennis Delonnay	Veteran's Administration Medical Center
Kathy Goldberg	St. Joseph Hospital
Ron Lukasiewicz	St. Joseph Hospital
Chuck Myers	McPherson Hospital
Glen Monroy	McPherson Hospital
Kay Robinett	Veteran's Administration Medical Center
James Schultz	University of Michigan Hospital
Lauren Tackel	Specialized Pharmacy Services
Edward Tian	Parke-Davis
Beth Weaver	McKesson Pharmacy Systems

Photography Program Advisory Committee

Cristie Badger	Student, Washtenaw Community College
Dean Hully	Foto 1 Photographic & Digital Imaging
Pauline Leubens	Detroit Free Press
Randy Mascharka	Commercial Photographer
Eva McDonough	Student, Washtenaw Community College
David Myers	Commercial Photographer
Ken Owen	Jobo Fototechnic, Inc.
James Wesley	Eastman Kodak Company

Police Academy Advisory Committee

Carl Ent	Ann Arbor Police Department
Paul Bunten	Saline Police Department
Leo J. Heatley	UM Dept of Public Safety
Brian Mackie	Washtenaw County
John Phillips	Pittsfield Township Department of Public Safety
Ronald J. Schebil	Washtenaw County Sheriff's Department
Leonard Supenski	Ypsilanti Police Department

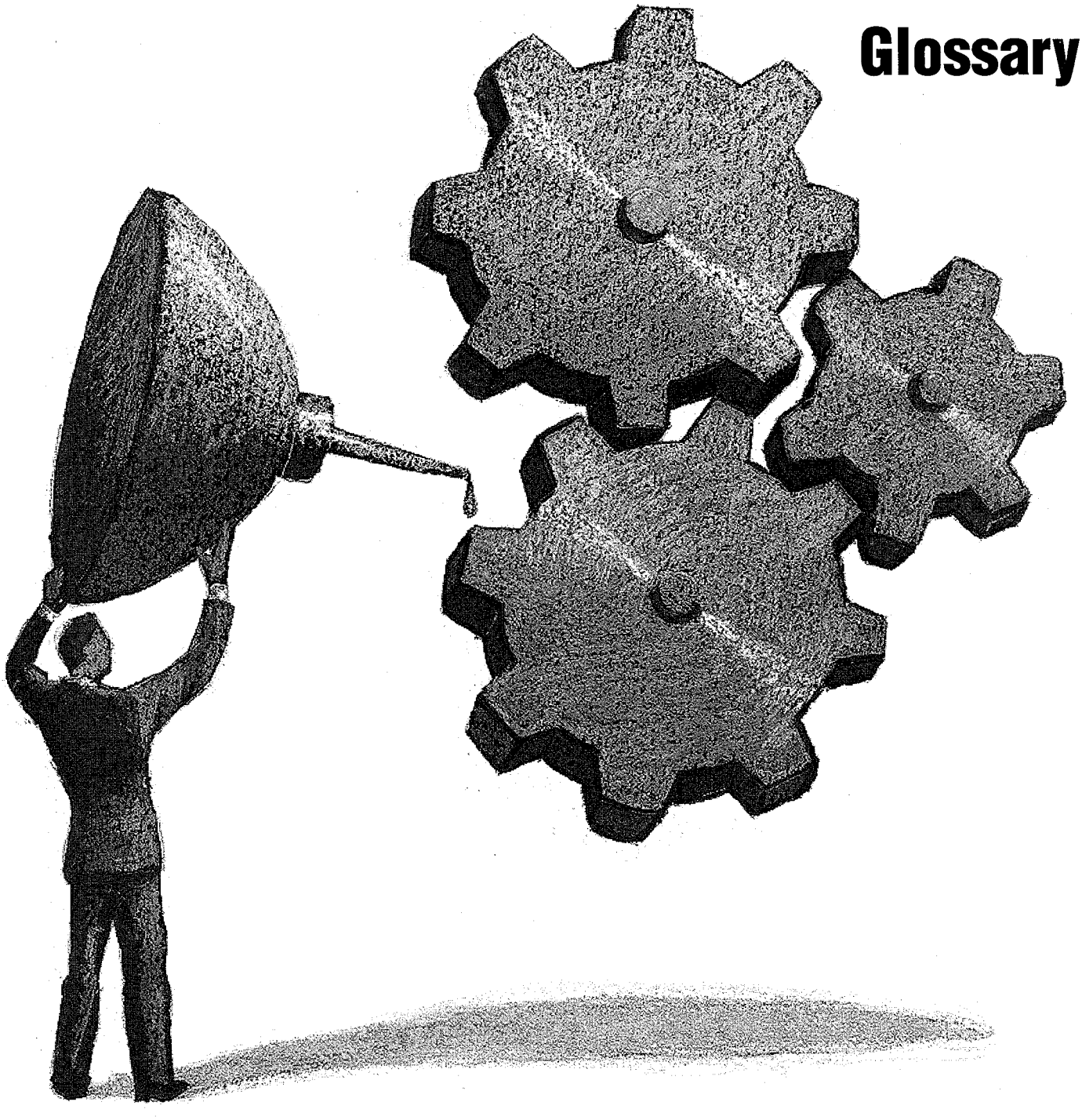
Respiratory Therapy Advisory Committe

Mark Kerwin	Veteran's Administration Medical Center
Clay Kotajarvi	Mott Children's Hospital
Randy Merren	Foote Hospital
Ola Mopkins	Veteran's Administration Hospital
Jerry Zohn	Bixby Medical Center

Surgical Technology Advisory Committee

Janice Campbell, CST	University of Michigan Hospital
George Felgenauer, RN	Henry Ford Hospital
Marlene Farrow, CST	Veteran's Administration Medical Center
Lottie Finnegan, RN	Herrick Memorial Hospital
Jane Gay, RN	Veteran's Administration Medical Center
Theresa Nestorak, RN	Washtenaw Community College
Marcia Olieman, RN	Herrick Memorial Hospital
Alice Speers, RN	Henry Ford Hospital
Sue Weir, RN	McPhereson Hospital

Glossary



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 a governing organization.

Admission
Acceptance of an applicant for enrollment in the College.

Articulation
The process of arranging instructional programs so that students may progress from high school programs to WCC programs or from WCC to four year college or university programs.

Assessment
The process of determining a student's interests or level of competence.

Associate Degree
A degree issued to a student who has completed a prescribed curriculum/program of courses totaling a minimum of 60 semester hours of credit.

Audit
To enroll in a College academic credit-bearing course on a non-credit basis. Such credits as the course normally carries are included as part of the total credit load and tuition assessed accordingly. An auditor ("AU") grade is issued.

College Certificate
A certificate issued to a student who has completed a prescribed curriculum/program of courses totaling a minimum of 30 semester hours of credit.

College Withdrawal
The process by which a student discontinues enrollment in all courses.

College Workstudy
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.

Core Curriculum
A body of learning areas which are incorporated into every WCC degree program of study. The learning areas include communication, mathematics, critical thinking, computer literacy, arts and humanities, natural sciences, technology, and social sciences.

Corequisite
An additional course or instructional experience which is required to be taken during the same semester with certain courses. For example, a section of Writing Lab is required with certain English courses.

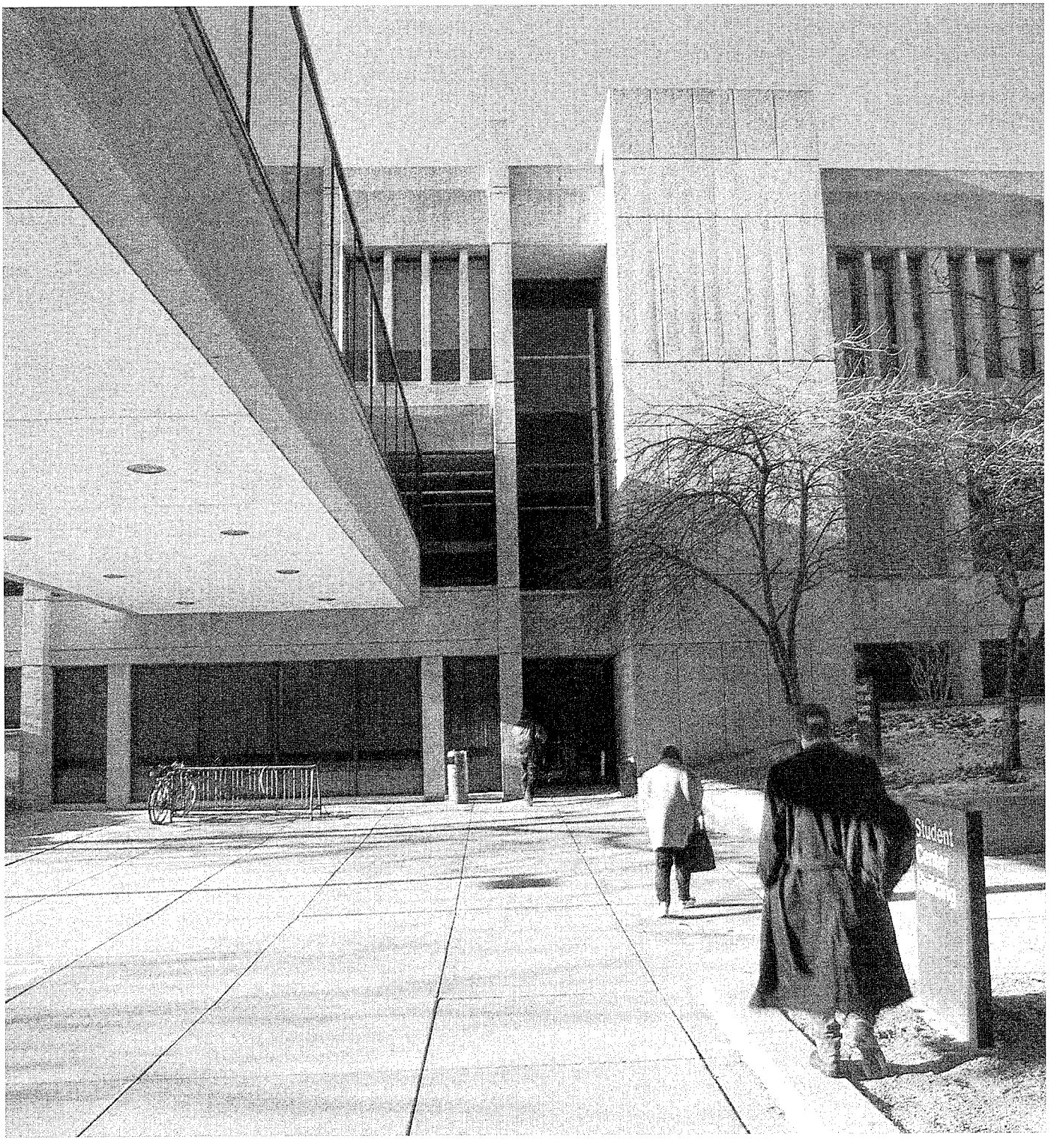
Course Load/Overload
The total number of credit hours a student is officially registered for in a given semester. A Full-time Student is one who enrolls in 12 or more credit hours per semester; a Part-time Student is one who enrolls in less than 12 credit hours per semester; a Half-time Student is a Part-time student enrolled in at least 6 credit hours per semester. Students enrolling in more than 18 credit hours per semester (or more than 6 spring or summer sessions) 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 experiences.

Educational Intent
A student's statement of the goal he/she intends to achieve by attending WCC. Educational intents include: to obtain a College Certificate; to obtain an Associate Degree; to obtain an Associate Degree for transfer to a four-year institution; to obtain credit hours for transfer to a four-year institution; to obtain new or improve existing job skills; to fulfill apprenticeship, journeyperson, or other trade-related instruction coursework; to attend classes for personal interest/development; or other goals.



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

A student is placed on financial hold when he/she has 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 or Associate Degree, and are not eligible to receive College services of any kind.

Freshman/First Year Student
A student who has completed fewer than 28 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.

Grade Point Average
The number of grade points earned divided by the semester hours of credit attempted. The grade point scale is: A=4.0, B=3.0, C=2.0, D=1.0.

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 college on at least a half-time basis.

Open Elective
A course that may be chosen from any 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.

Postsecondary 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
A planned curriculum in a field of study which includes a list of specific requirements.

Registration
The process of officially enrolling in a course (or courses) and paying tuition. Upon registering, 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 mechanical and/or electronic device 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 28 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.

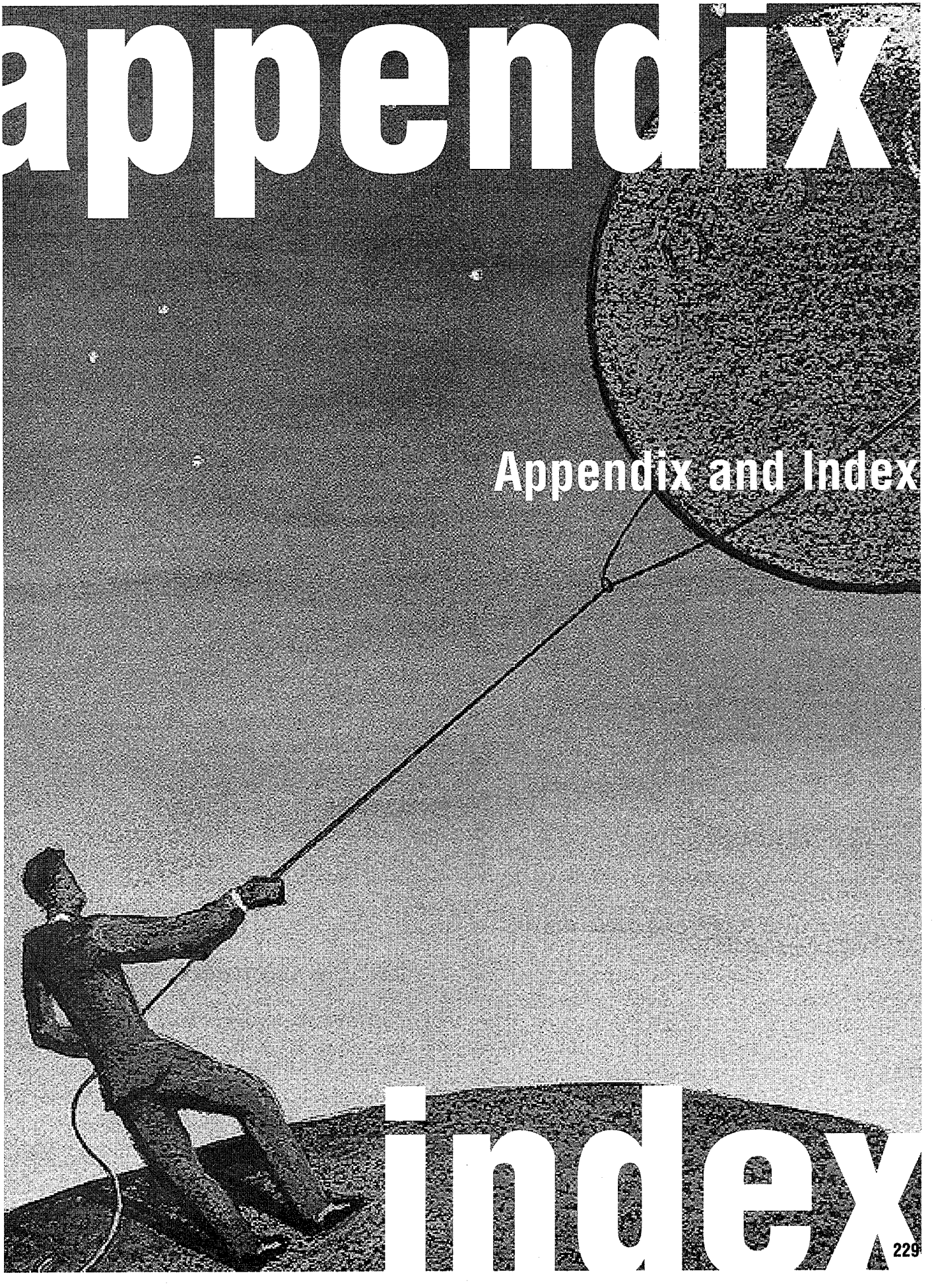
Transcript
A transcript lists all courses taken by a student, showing the final grade received for each course. The official transcript is housed in the Student Records Office.

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.

appendix

Appendix and Index



index

Appendix A

Articulations and Transfer Agreements

Michigan Association of Collegiate Registrars and Admission Officers (MACRAO) Agreement

An Agreement between Michigan's two- and four-year colleges and universities has been developed to assist students who complete an associate degree at a Michigan public community college in transferring credit to a four-year institution. The agreement insures that students receiving Associate Degrees at Washtenaw Community College and meeting the requirements indicated below, will have satisfied the basic first two-year requirements of Michigan four-year institutions which have signed this agreement. Students should check with the college to which they plan to transfer to determine if the MACRAO agreement is honored.

Basic Requirements of Agreement:

The basic requirements are designed to provide students with a broad intellectual experience in the major fields of knowledge. Basic two-year requirements include English Composition and the broad categories of Social Science, Natural Science, and Humanities. Specific courses in each category are determined by the institution offering the courses. Courses which may not be transferable, i.e., developmental and some technical or occupational courses, are not included in the basic requirement.

I. English Composition

English Composition ..... ENG 111, 122

II. Social Science (8 credits in more than one discipline)

Anthropology ..... ANT 201, 202
Economics ..... ECO 111, 211, 222
Geography ..... GEO 100
History ..... HST 101, 102, 201, 202
Political Science ..... PLS 112, 150
Psychology ..... PSY 100, 150, 200, 209, 257
Sociology ..... SOC 100, 150, 205, 207

III. Natural Science (8 credits in more than one disicipline, one must be a laboratory course)

Biology ..... BIO 101, 102, 103, 108, 111, 208, 227, 228, 237
Chemistry ..... CEM 105, 111, 122, 211, 218, 222
Physics ..... PHY 105, 111, 122, 140, 211, 222
Geology ..... GLG 100, 114, 125
Mathematics ..... MTH 160, 169, 179, 181, 182, 191, 192, 293, 295

IV. Humanities (8 credits in more than one discipline)

Art ..... ART 101, 111, 112, 122, 130
Drama ..... DRA 152, 153
Foreign Language ..... FRN/SPN 111, 120, 122, 213, 224
Humanities ..... HUM 101, 150, 160
Literature ..... ENG 160, 170, 181, 200, 211, 212, 213, 222, 223, 224
Music ..... MUS 140, 146, 152, 180, 183
Philosophy ..... PHL 101, 200, 205, 250
Religion ..... ANT 150
Communications ..... COM 101, 102, 183

Public School Articulations

Articulation agreements currently exist between WCC and 18 public school districts, whereby students may receive college credit for successful completion of certain 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. Student must apply for articulated credit within two years of high school graduation.

Copies of specific Articulation Agreements are available at the WCC Student Records Office.

College and University Articulation Agreements

Articulation agreements exist between WCC and seven four year colleges and universities. These agreements allow WCC students in specific programs to apply some or all of their credits earned towards a bachelor's degree. The chart on the next page describes the articulation agreements between specific programs at WCC and the seven colleges and universities. Information on specific articulation agreements available at the Placement and Transfer Center.

Transfer Guides

Transfer guides are helpful in listing WCC courses and/or recommended programs of study that transfer to various colleges and universities in Michigan and regionally. The Placement and Transfer Center and the Counseling Center have alphabetical files of transfer guides to all the major four year institutions in Michigan.

Articulation Agreements with Other Educational Agencies

While most of the articulation programs enable students to transfer WCC courses to other colleges, two agreements allow for courses taken at other colleges to transfer to WCC. These agreements are with the Specs Howard School of Broadcasting and The Michigan Institute of Aeronautics. Please check with a counselor at both WCC and the articulating institution for specific requirements.

Appendix B

Selected National Institutional College Memberships

ACCI/League for Innovation
American Association of Higher Education
American Association of Community Colleges
American Association of Community College Trustees
American Council on Education
American Library Association
Community College Leadership Institute
Continuous Quality Improvement Network
Council of North Central Community and Junior Colleges
Michigan Community College Association
Michigan Community College Consortium
Michigan Community College Virtual Learning Collaborative
Michigan Library Association
Michigan Technology Council
National Association of Industrial Technology
The National Institute for Staff and Organizational Development
North Central Association of Colleges and Secondary Schools

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 July, 1998 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.

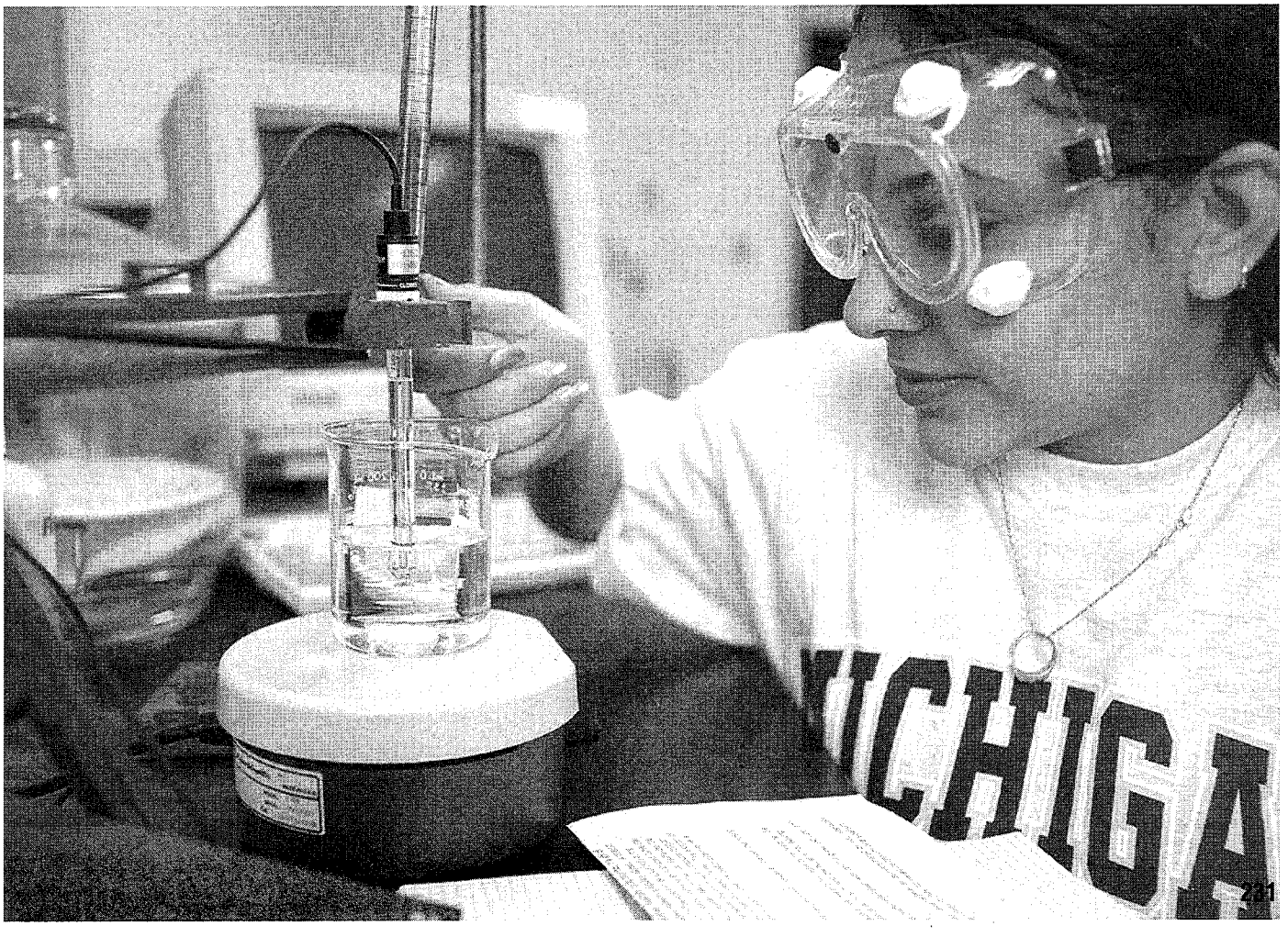
ADA/EEO/Title IX/Section 504 Compliance Statements

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.



Index

A

Ability to Benefit 21
Academic Advising 27
Academic Calendar ....inside front cover
Academic Deans....206
Academic Honors....44
Academic Policies....42
Academic Skills Center....33
Academic Skills Courses....112
Accounting Courses....114
Accounting Program....61
Accreditations....1
Achievement Certificate....49
Adding and Dropping Courses....16
Administrative Assistant Technology Program 65
Admission....8
General Policy....10
Program Admission Priorities 10
Procedures....10
Adult Resource Center....26
Adult Transitions 26
Advanced Certificate 49
Alcohol and Drug Policy....29
Alcoholic Beverages on Campus....54
Alternative Education 38
Alumni Association....26
Anthropology Courses 114
Application Fee....20
Application for Financial Aid 21
Application for Graduation....48
Apprenticeship Programs 106
Apprenticeship Training....106
Architectonics Courses....115
Architectural Drafting Program....91
Architectural Drafting Detailing Program 92
Art Courses....116
Articulation Agreements....44
Associate Degrees....44
Associate Degree Programs (list) 6
Associate Degree Requirements....49
Astronomy Courses 117
Auditing a Course....16
Automotive Body Repair Courses....117
Automotive Body Repair Program 89
Automotive Body Service Program 89
Automotive Mechanics Program 90
Automotive Service Courses....119
Automotive Service Programs 89
Automotive Service Technology Program 90
Automotive Spray Painting Program....91
Automotive Spray Painting Assistant Program....91

B

Biology Courses 121
Board of Trustees 206
Books and Supplies (cost of)....20
Bookstore 26
Building Abbreviations ....inside front cover
Business and Community Services 34
Business Computer Programming Program....67
Business Management Courses....123
Business Management Program 62
Business Marketing Program....62
Business Office Systems Courses....126
Business Office Systems Programs 65
Business Programs, Division of....61
Business Sales Program....62

C

Campus Information 52
Campus Map....55
Cancellation of Classes 45
Career Counseling....27
Certificates....45
Certificate Programs (list) 6
Certificate Requirements....49
Changing Course Sections 16
Chemistry Courses....129
Child Care Worker Courses....130
Child Care Program 75
Children's Center 26
Class Attendance....45
Clubs (student) 28
College Certificate Requirements....49
College Closing for Emergency and Severe Weather....54
College Governance 4
College Level Examination Program (CLEP)....46
Commencement 49
Communications Courses....132
Completion Certificate 49
Computer Aided Drafting Program:
Electronic Option....92
Mechanical Option....93
Computer Information Systems Courses....133
Computer Instruction Programs 67
Computer Labs 33

Computer Science Courses 136
Computer Science Transfer Program 85
Computer Systems Technology Program ....68 &95
Computerized Accounting Program 61
Construction Management Program 106
Construction Technology Courses 137
Continuing Education Units (CEU's) 40
Co-Op Courses 112
Core Curriculum ....45&59
Core Elements 13 & 14 60
Correctional Science Courses 139
Correctional Science Program 76
Correspondence Courses 45
Counseling/Advising 27
Course Changes 195
Course Descriptions 110
Course Load 45
Course Substitutions 50
Credit by Examination 46
Credit by Examination Fee 20
Credit-Granting Procedures 45
Criminal Justice Courses 139
Criminal Justice Program 77
Criminal Justice — Law Enforcement Certification Program 78
Culinary Arts Courses 140
Culinary Arts Program 69
Culinary and Hospitality Programs 69
Current Facilities 5
Curriculum Organization 198

D

Dance Courses 142
Dean's Honor Roll 44
Declaring Educational Intent 47
Deferred ("DF") Grades 47
Deferred Tuition Loan Fee 20
Dental Assisting Courses 143
Dental Assisting Program 71
Dental Clinic 54
Digital PrePress Courses 145
Digital PrePress Program 101
Discontinued Courses 196
Discontinued Programs for 1998 197
Drafting Detailing Program 93
Drafting Programs 91
Drama Courses 145
Dropping and Adding Courses 16
Drug and Substance Abuse Prevention 29

E

Eating and Drinking in class 54
Economics Courses 145
Electrical Engineering Technology Courses 146
Electrical Engineering Technology Program 96
Electricity/Electronics Courses 146
Electricity/Electronics Programs 95
Electronics Technology Program 96
Emergency Notification of Students 54
Emergency Telephones and Escort Services 54
Emeritus Program 36
Emeritus Student Admission 12
Emertus Teaching Faculty 221
Employment (Student) 22
English as a Second Language 33
English Courses 149
Evening/Weekend Degree Program 40
Executive Officers 206
Explanation of Grades 47
Extension Programs 36

F

F-1 Students 11
Facilities 5
Faculty and Professional Staff 207
Family Educational Rights and Privacy Act (FERPA) 50
Fees 20
Final Grades 16
Financial Aid 21
- Application 21
- Academic Progress Criteria 22
- Academic Progress Policy for Stafford Loan Recipients 22
- Assessment of Need 21
- Deadlines 22
- Distribution 22
- Refund Policy 22
- Types of 21

Financial Information 19
First Year Student 50
Fluid Power Courses 153
Fluid Power Technology Program 97
Food Production Specialty Program 70
Food Services (cafeteria) 54
Foreign Student Admission *(see International Student Admission)*
Former Student Re-admission 10
French Courses 154
Freshman 50
Full-time Student 45

G

General Information **2**
General Education or Core Curriculum 45
General Studies Programs 59
Geography Courses 154
Geology Courses 155
German Courses 155
Glossary **225**
Grade Appeal Procedure 48
Grade Points 47
Grade-Point Average 48
Grading Scale 47
Graduation Honors 44
Graduation Requirements 49
Grants (student) 21
Graphic Design Technology Courses 156
Graphic Design Technology Program:
Design Option 102
Illustration Option 102
Guarantee of Student Success Policy 50
Guaranteed Student Loan (GSL) *(see Stafford Loan)*
Guest Student Admission 10

H

Half-time Student 45
Health and Public Services Programs, Division of **71**
Health Career Student Admission 12
Health Science Courses 158
Heating Courses 159
High School Student Admission 10
History Courses 161
History of WCC 4
Honors Options in Associate Degree Programs 44
Hotel-Restaurant Management Courses 162
Hotel-Restaurant Management Program 70
Humanities and Social Sciences Programs, Division of **82**
Humanities Courses 162
Human Services Program 82
Human Services Transfer Program 82
Human Services Worker Courses 162
Hydraulic Assembly Program 98

I

Incomplete ("I") Grades 47
In-district Students 12
Industrial Drafting Courses 163
Industrial Drafting Technology Program 94
Industrial Technology Courses 165
Industrial Technology Programs 97
Information Center 54
Information Processing Technology Program 66
Institute for Teaching/Learning Support Services 40
Institute for Workforce Development 36
Instructional Media *(see Learning Technologies)*
Instructional Technology Fee 20
International Student Admission 11

J

Job Placement *(see Career Planning)*
Job Skills Academy 26
Journeyperson Industrial Program 107

L

Late Registration Fee 20
Learning Disability Services 40
Learning Resource Center 32
Learning Support Resources **32**
Learning Support Services ..... 27 & 40
Learning Technologies 32
Liberal Arts Transfer Programs:
Biology/Pre-Medicine 85
Chemistry/Pre-Medicine 86
Humanities/Social Sciences 83
Math/Natural Sciences 87
Library *(see Learning Resource Center)*
Loans (student) 21
Lost and Found 54

M

Machine Operation Program 98
Machine Tool Technology Courses 169
Machine Tool Technology Program 98
MACRAO Agreement 231
Map, Campus 55
Math and Natural Sciences Programs, Division of **85**
Mastery Certificate 49
Math Center 33
Mathematics Courses 165
Mechanical Engineering/Manufacturing Engineering
Technology Program 94
Mechanical Engineering Technology Courses 170
Medical Emergency Procedures 54
Medical Administrative Assistant Technology Program 66
Meeting Rooms 55
Memberships, College 230
Michigan Association of Collegiate Registrars and Admission Officers
(MACRAO) Agreement 230
Microcomputer System Support Program 68
Military Training and Schools 46

Mission of the College III
Music Courses 170

N

National League for Nursing (NLN) Examination 46
Natural Resource Courses 172
New Courses 196
New Programs for 1998 197
New Student Admission 10
Non-Attendence "N" Grade 47
Non-Credit Seminars, Short Courses, Workshops 36
Non-Traditional Credits 26
Numerical Control Courses 172
Numerical Control Machine Operations Program 99
Numerical Control Technology Program 100
Nursing Courses 173
Nursing Program 71
Nursing Transfer Program 73

O

Out-District Students 12
Out-of-Country Students 12
Out-State Students 12
Organizational Charts 200
Orientation (student) 13

P

Parking 55
Part-time Student 45
Pass/No Pass Grades 48
Personal Counseling 27
Personnel 205
Pharmacy Technology Courses 175
Pharmacy Technology Program 74
Philosophy Courses 176
Phi Theta Kappa 50
Photographic Assisting Program 104
Photographic Technology Program 103
Marketing Option 104
Photography Courses 177
Physical Education Courses 178
Physics Courses 179
Placement and Transfer Center 27
Police Academy 7
Political Science Courses 179
Pre-Engineering Science Program 87
Pre-Engineering Science - Chemical and Materials Engineering Option Program 88
Professional Office Systems Program 67
Profile of WCC 4
Program Admission Priorities 10
Program Advisory Committees 222
Program Index 58
Program Listings 56
Program Requirements 50
Program Waivers 50
Programs of Study (list) 6
Proprietary Schools 46
Psychology Courses 180
Public School Articulations 230
Public Services Programs 71
Public Service Training and Police Academy 7

Q

Quality Control Technology Courses 181
Quality Control TechnologyProgram:
Electronics Option 108
Management Option 108
Science/Engineering Option 109
Specialty Option 109

R

Radiography Courses 182
Radiography Program 78
Real Estate Courses 184
Refrigeration and Air Conditioning Courses 184
Refrigeration and Air Conditioning Program 107
Refunds 20
Regional Centers/Extension Program 36
Registered Nursing Program 73
Registration 16
Registration Fee 20
Release of Student Information Policy 50
Repeating a Course 16
Residency 12
Respiratory Therapy Courses 185
Respiratory Therapy Program 79
Robotics Courses 187
Robotic Technology Program 100
Russian Courses 188

S

Satisfactory "S" Grade 47
Scholarships 21
Science Courses 188
Scientific and Technical Communication Program 84
Second Year Student 50
Secretarial Courses *(see Business Office Systems)*

Stafford Loans 22
Statement of Mission and Values ..... **IV**
Student Activities 28
Student Assembly 27
Student Assessment Policy 50
Student Assistance Services 29
Student Classifications 50
Student Complaint Procedure ..... 29&50
Student Orientation 13
Student Records **14**
Student Rights and Responsibilities 29
Student Services Courses 190
Student Success Policy 50
Student Support Services **24**
Substance Abuse 29
Surgical Technology Courses 190
Surgical Technology Program 81

T

Table of Contents 1
Tax Courses 191
Technical Training 106
Technology Programs, Division of **89**
Telecourses 40
Telephone/Office Directory ..... *inside front cover*
Testing Center 33
Theft, Vandalism Reporting 55
Title II Statement 231
Title IX Statement 231
Toolroom Machine Operation Program 101
Trade Related Instruction Courses 192
Trade Related Instruction Programs 106
Transcripts/Final Grades 16
Transfer Agreements 230
Transfer Credit 46
Transfer Student Admission 11
Tuition 20
Tuition refunds 20
Tutorial Program 40
Types of Study 5

U

Unsatisfactory "U" Grade 47

V

Values of the College IV
Vandalism, Reporting of 55
Veteran Certification 17
Visual Arts Technology Programs 101
Vision Statement IV

W

Washtenaw Technical Middle College 59
Waiver of Program Requirement 50
World Wide Web Site Address ..... *inside front cover*
Weekend Degree Program 40
Welding and Fabrication Courses 193
Welding and Fabrication Programs 105
Welding Maintenance Mechanics Program 105
Welding Technology Program 105
Withdrawal from College 16
Withdrawal "W" grade 47
Women's Resources *(see Adult Resource Center)*
Workplace Learning Center 41
Writing Center 33

Y

Yoga Courses 194

Washtenaw Community College
4800 East Huron River Drive
P.O. Box D-1
Ann Arbor, Michigan 48106-1610