

Catalog

2001-2003

LANSING COMMUNITY COLLEGE WHERE SUCCESS BEGINS LANSING COMMUNITY COLLEGE WHERE SUCCESS BEGINS



C A T A L O G



400-600 North Washington Square, P.O. Box 40010, Lansing, Michigan 48901-7210
Information Center (517) 483-1620 or 1-800-644-4LCC • 24-hour-a-day assistance (517) 483-1111
Office of Disability Services Telephone Device for the Deaf, TDD (517) 483-1218
World Wide Web: <http://www.lcc.edu>

Accredited by North Central Association of Colleges and Schools

LCC: SUCCESS BEGINS HERE

Lansing Community College has been committed to the best in education for over forty years. As one of the largest, most comprehensive community colleges in the country, we are continuing that commitment into the new millennium. Year round classes are offered on our 28-acre, capital city campus. There are more than 150 degree and certificate programs and over 2,500 classes. The first two years of a liberal arts education can be earned at LCC and transferred to a four-year college or university. We offer a comprehensive mix of education and training, and we provide state-of-the-art computer labs and classrooms as well as a continuously updated media services center and library within the Abel B. Sykes, Jr. Technology and Learning Center.

In addition to our main campus, we operate the Aviation Center at Capital City Airport in Lansing, the Truck Driver Training Center near Battle Creek, and the STAR Institute career training center. Our Business & Community Institute delivers customized training, business, and personal development services for business, industry, government, and working professionals. We also offer international programs such as our Japan Adventure program.

We have Learning Centers in more than 20 communities within a 30-mile service district which makes Lansing Community College accessible to more people in more areas. For the ultimate in accessibility, we offer a series of Internet courses through our Virtual College.

Lansing Community College is accredited by the North Central Association of Colleges and Schools and serves nearly 40,000 people annually. We are committed, as ever, to lifelong education for all.

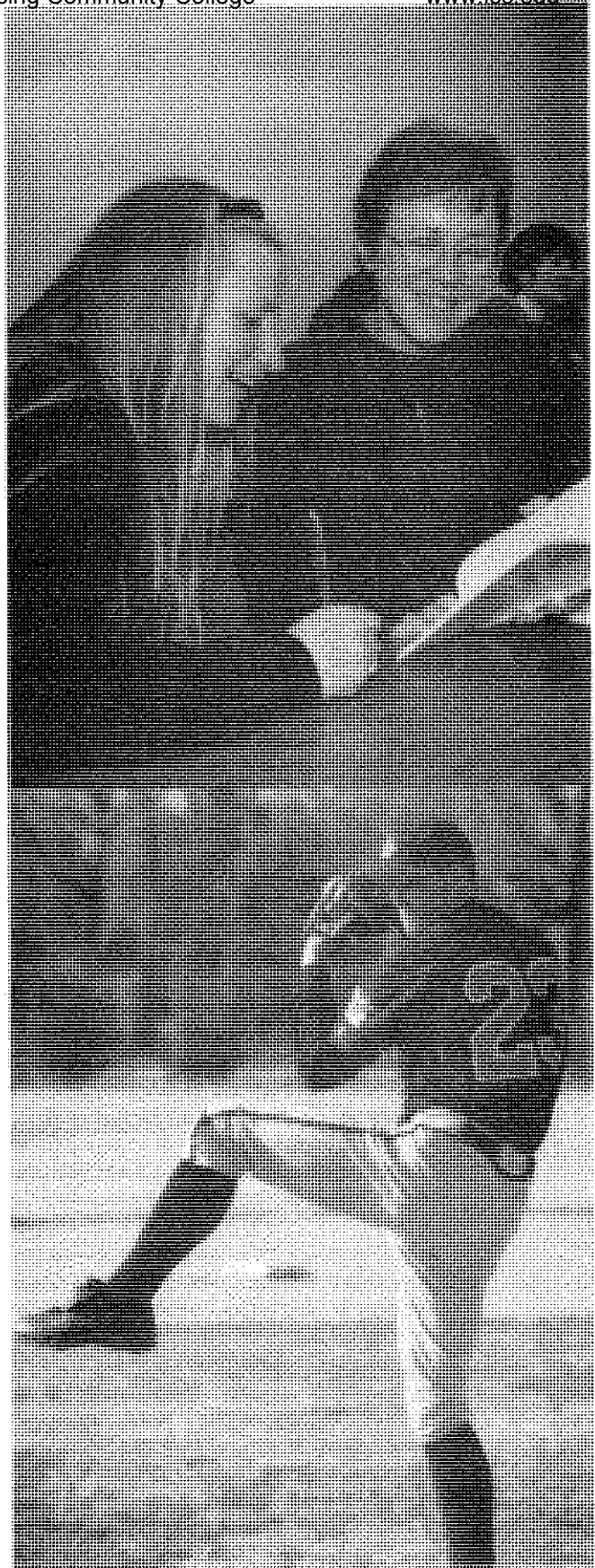
Lansing Community College—Success Begins Here!

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Please keep this catalog as a reference to the learning opportunities available at Lansing Community College. Education is a lifelong process, and LCC continues to be a resource for its students throughout the nation and the world. Futures not only begin at LCC, they are enriched, over and over, throughout a lifetime.

This catalog was produced by Planning and College Relations at Lansing Community College.



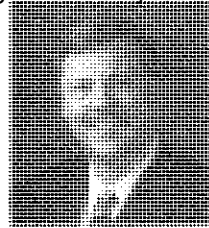


MISSION STATEMENT

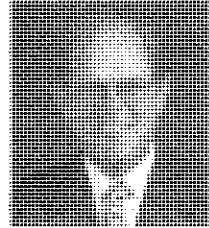
Lansing Community College exists so that all people have educational and enrichment opportunities to improve their quality of life and standard of living.

Lansing
Community
College

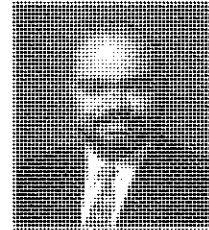
BOARD OF TRUSTEES



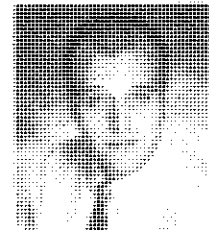
Brian C. Jeffries
Chair



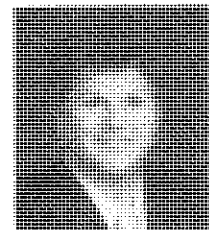
C. David Patterson
Vice Chair



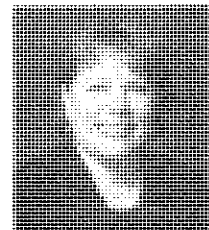
Mark H. Canady
Secretary/Treasurer



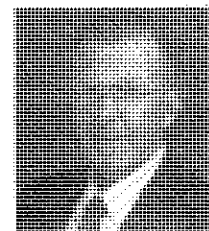
Todd Heywood
Trustee



Olga A. Holden, Ph.D.
Trustee



Kathy G. Pelleran
Trustee



Thomas Rasmusson
Trustee

The Board of Trustees abides by the Open Meetings Act which allows opportunities for student and/or public comment.

MESSAGE FROM THE PRESIDENT

Dear Student,

Welcome to Lansing Community College. Congratulations on selecting one of the top community colleges in the country to continue your education.

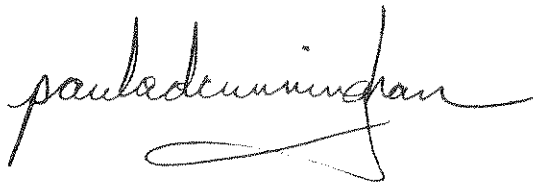
Whether you are here to learn new career skills, pursue a personal interest, or preparing to transfer to a four-year institution, we are confident that we can help you achieve your goals. Our outstanding faculty is dedicated to enhancing your college experience. There are many outstanding programs and courses, each presented with state-of-the-art teaching and technology. We also offer a wide range of career exploration, international, and transfer programs to enrich your class work.

In addition, there are many diverse and interesting extracurricular activities available. You can participate in programs offered by the Student Leadership Academy, Volunteer Services, The Lookout (LCC's student newspaper), performing arts, student groups and organizations, LCC's radio and television stations and athletics or athletic events.

Lansing Community College is here to serve your learning needs. We are glad that you are here and we will continue to work to make certain that your LCC experience exceeds your expectations. We invite your suggestions and ideas for improving your college.

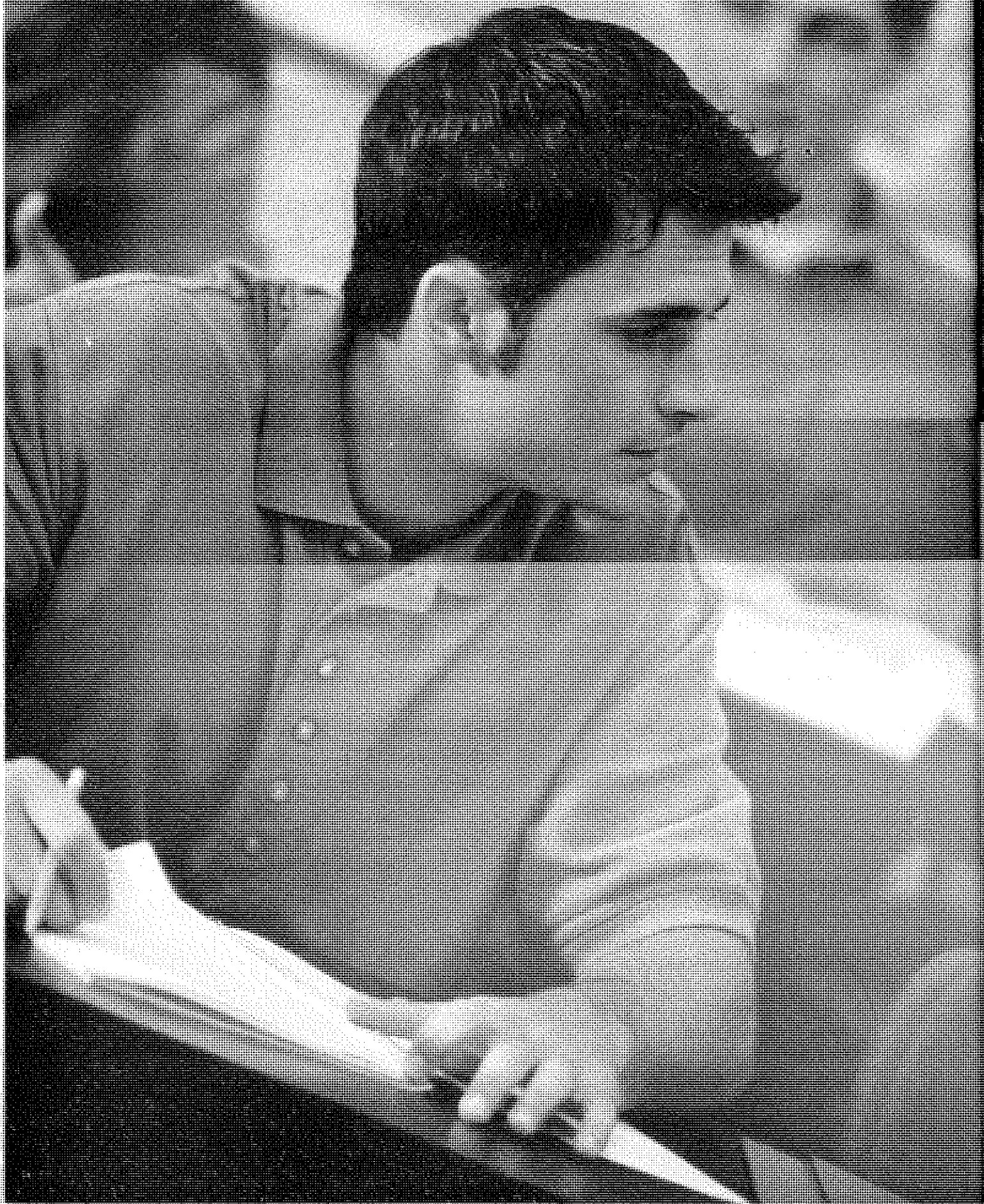
I wish you all the best.

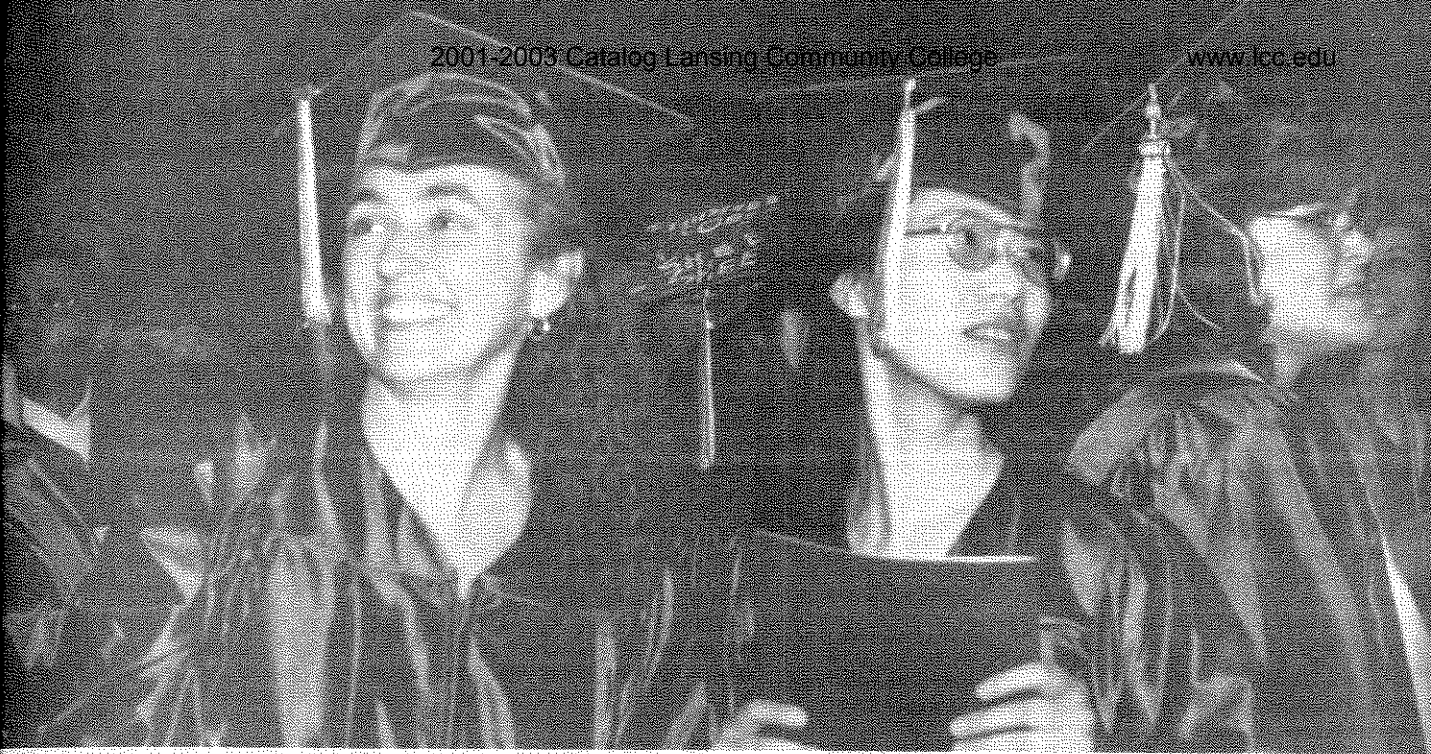
Respectfully,



Paula D. Cunningham
President
Lansing Community College







General Information

LANSING COMMUNITY COLLEGE 2001-2003 CATALOG



DIRECTORY OF DEPARTMENTS

(Area Code 517)

Business & Media Careers Division

Business Department (OC 210)	483-1522
Accounting.....	483-1599
Business.....	483-1532
Credit Union.....	483-1541
Hotel/Motel and Food Service Operations.....	483-1542
Insurance.....	483-1599
Legal Assistant.....	483-1503
Management/Labor Relations.....	483-1532
Marketing.....	483-1532
Quality Assurance.....	483-1532
Real Estate.....	483-1532
Travel and Tourism.....	483-1542

Information Technology & Office

Systems Dept. (OC 137)	483-1546
Computer Repair Technician.....	483-1351
Computer Software.....	483-1587
Electronics Technology.....	483-1546
Information systems.....	483-1546
Office Administration/Secretarial.....	483-1587

Visual Arts & Media Department

(AOF 314).....	483-1574
Art, Design and Multimedia.....	483-1476
Computer Graphics.....	483-1476
Media Technology (TLC 123).....	483-1670
Motion Picture Technology (TLC 123).....	483-1676
Photo Imaging Technology (PC 117).....	483-1673
Stage Technology (TLC 123).....	483-1670

Human, Health & Public Services Division**Health & Human Services Dept.**

(GVT 1750).....	483-1410
Child Development.....	483-1410
Dental Hygiene (A&S 007).....	483-1457
Diagnostic Medical Sonography.....	483-1410
Emergency Medical Technology.....	483-1410
Gerontology/Aging.....	483-1410
Human Services/Social Work.....	483-1410
Massage Therapy.....	483-1410
Paramedic.....	483-1410
Radiologic Technology.....	483-1410
Surgical Technology.....	483-1410

Nursing Careers Dept. (GVT 1750)	483-1410
Allied Health.....	483-1410
Community Health Services.....	483-1410
Nursing.....	483-1410

Public Services Department (OC 232)	483-1570
Corrections.....	483-1570
Criminal Justice/Law Enforcement.....	483-1570
Fire Science.....	483-1348
Police Academy.....	483-1964

Construction, Manufacturing and Transportation Division**Architecture & Land Planning Dept.**

(GVT 1380).....	483-1336
Agriculture.....	483-9675
Architecture.....	483-1327
Building Maintenance.....	483-1404
Building Trades/Residential Builder.....	483-1361
Civil Technology.....	483-1336
Geographic Information Systems.....	483-9675
Heating, Ventilating & Air Conditioning.....	483-1404
Horticulture.....	483-9675

Interior Design.....	483-9679
Landscape Architecture.....	483-9675

Manufacturing Department (GVT 1380)

Apprenticeship Programs.....	483-1336
Computer Aided Drafting & Design.....	483-9819
Computerized Numerical Control.....	483-1390
Machine Tool and Maintenance.....	483-1358
Electrical Technology.....	483-1360
Welding Technology.....	483-9682

Transportation Department (GVT 1380)

Automotive/Auto Body.....	483-1336
Aviation/Avionics.....	483-1406
Truck Driver Training.....	483-1336
(Fort Custer, Battle Creek).....	(616) 731-4125

Business & Community Institute

Business and Industry Training	483-1857
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Facilities Rentals/Conference Services

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Small Business Development	483-1921
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Extension and Community Education

(Learning Centers).....	483-1860
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International Programs	483-1006
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Japan Adventure/

Japan Horizon (OUF 228).....	483-1006
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Liberal Studies Division

Office of Instruction (A&S 110)	483-1015
Military Science/ROTC.....	483-1015
Teacher Education Project.....	483-1015

Communication (A&S 211)	483-1040
Foreign Language.....	483-1040
Linguistics.....	483-1040
Sign Language.....	483-1040
Speech.....	483-1040
Writing/Journalism.....	483-1040

Humanities and Performing Arts

(A&S 255).....	483-1018
Humanities (Art History, English/Literature, History, Humanities, Philosophy, Religion).....	483-1018
Performing Arts (Dance, Music, Theater).....	483-1018

Math and Computer Science (A&S 408)

Applied Math.....	483-1087
Computer Science.....	483-1087
Statistics.....	483-1087
Transfer Math.....	483-1087

Physical Fitness and Wellness

(GVT 3610).....	483-1227
Activities (Aquatics, Dance & Outdoors).....	483-1227
Cardiac Rehab/Adult Fitness.....	483-1437
Combative/Weight Training.....	483-1227
Fitness (Health & Cardiac).....	483-1227
Individual & Team Sports.....	483-1227
Kinesiology.....	483-1227
Professional.....	483-1227

Science (A&S 408)	483-1092
Anatomy.....	483-1092
Biology/Molecular Biology.....	483-1092
Chemistry.....	483-1092
Environmental Science.....	483-1092
Geological Science.....	483-1092
Integrated Science.....	483-1092
Physics.....	483-1092

Social Sciences (A&S 353)	483-1126
Economics.....	483-1126
Geography.....	483-1126
Political Science/Government.....	483-1126
Psychology/Education.....	483-1126
Sociology/Anthropology.....	483-1126

Police and Public Safety

Public Safety (GVT 2800)	483-1800
TDD.....	483-9916

Student and Academic Support Division

Office of Instruction (SPS 211)	483-1635
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Assessment Center (GVT 2100)	483-5500
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Athletics (GVT 4700)	483-1624
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Career Services (GVT 2430)	483-1172
Career and Employment Services.....	483-1172

Enrollment Services

Counseling (GVT 2300).....	483-1904
Advising Center (GVT 2300).....	483-1904
Disability Support Services (GVT 2300).....	483-1904
TDD.....	483-1207
Student Development Courses (GVT 2300).....	483-1904
Women's Resource Center (GVT 2300).....	483-1199
Entry Services (GVT 2200).....	483-1266
Admissions (GVT 2200).....	483-1200
Limited English Proficiency (GVT 2381).....	483-1216
Minority Outreach and Recruitment (GVT 2381).....	483-9755
Multicultural Center (GVT 2370).....	483-1059
Office of the Registrar (GVT 2200).....	483-1200
Financial Aid (GVT 2200).....	483-1200
Veteran's Services (GVT 2200).....	483-1296

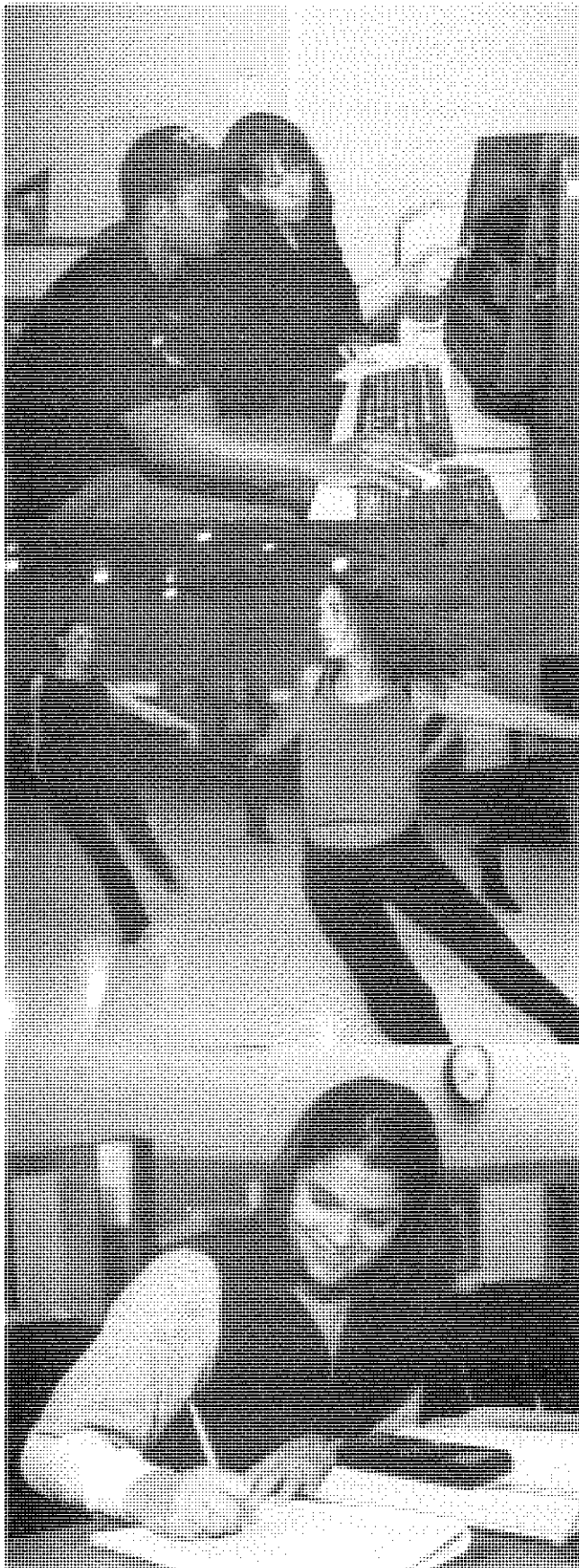
Honors (A&S 211)	483-1040
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Instructional and Student Support

Library Information Services (TLC 201A).....	483-1657
Tutorial Services (A&S 103).....	483-1206
Media Services (TLC 123).....	483-1670
Interactive Learning Center (IOC 200).....	483-1566
Telecourse Hotline (TLC 123).....	483-1695
Telelearning (TLC 123).....	483-1695
Student Life (GVT 2473).....	483-1285

Language Skills (A&S 253G)	483-1061
Learning Center (A&S 253).....	483-1060
Limited English Proficiency Courses (A&S 253G).....	483-1061

Mathematical Skills (A&S 309JJ)	483-1073
Math Lab (A&S 309).....	483-1073



ACADEMIC CALENDAR

For an up-to-date academic calendar, including start and end dates for the 2001–2003 Fall Semester, Spring Semester, and Summer Session, point your Web Browser to:

www.lansing.cc.mi.us

or call our Information Center at:

1-800-644-4LCC or 1-517-483-1620

In addition, registration information and dates are published in the *Course Schedule* for each semester, or students may call the Office of the Registrar.

Summer Session 2001

Classes Begin.....	June 6
Independence Day.....	July 4
Last Class Day	August 1

Fall Semester 2001

Classes Begin	August 23
Labor Day	September 3
Thanksgiving.....	November 29 & 30
Last Class Day	December 16

Spring Semester 2002

Classes Begin	January 12
Martin Luther King, Jr. Holiday	January 21
Spring Break.....	March 4–10
Last Class Day	May 10
Graduation	May 11
Memorial Day.....	May 27

Summer Session 2002

Classes Begin.....	June 6
Independence Day.....	July 4
Last Class Day	August 1

POLICIES, PROCEDURES, AND REGULATIONS

ADMISSIONS INFORMATION

GENERAL ADMISSION CRITERIA

Lansing Community College is an open-door community college designed to extend service to applicants possessing appropriate preparation to benefit from programs and courses offered at the College. Determination and judgment of an individual's preparation and readiness to benefit from a course or program at Lansing Community College is the responsibility of the College's professional personnel.

Persons who are 18 years of age or older or who have graduated from high school are eligible to attend Lansing Community College. Persons who are under 18 years of age, enrolled in high school, and working to fulfill high school graduation requirements may be admitted to LCC under the *Dual Enrollment* or *Special Admission Program* explained later in this section. Nonpublic home school applicants who are 14 years of age or older may be admitted under the *Nonpublic Home School Program* explained later in this section. Admission to the College does not guarantee admission to a particular program or class.

GENERAL ADMISSION PROCEDURES

Procedures for Completing the Admissions Application

1. Complete all items requested on the application for admission.
2. International applicants must follow the procedures outlined under *International Applicants*.
3. Applicants in high school must follow the procedures outlined under *Dual Enrollment Program* or *Special Admission Program*.
4. Nonpublic home school applicants must follow the procedures outlined under the *Nonpublic Home School Program*.
5. Guest students must follow the procedures outlined under *Guest and International Guest Applicants*.

APPLICANTS MAY MAIL, FAX (517) 483-9668, OR BRING APPLICATIONS TO THE ENROLLMENT SERVICES OFFICE LOCATED IN THE GANNON VOCATIONAL-TECHNICAL CENTER, SUITE 2200. ITEMS SHOULD BE MAILED TO: 1111-ENROLLMENT SERVICES/ADMISSIONS, LANSING COMMUNITY COLLEGE, PO BOX 40010, LANSING, MI 48901-7210. FOR ADDITIONAL INFORMATION CALL (517) 483-1200. APPLICANTS MAY ALSO SUBMIT AN ONLINE APPLICATION VIA THE INTERNET AT OUR WEB ADDRESS [HTTP://WWW.LANSING.CC.MI.US](http://WWW.LANSING.CC.MI.US).

Applicants who are admitted to LCC will receive notification and information regarding registration procedures. Applicants denied admission will receive a letter stating the reason for denial and explaining the appeal process (see *Appeal Process for Denial of Admission*).

ACADEMIC ASSESSMENT AND PLACEMENT TESTING FOR STUDENT SUCCESS

General Information

Lansing Community College cares about student success and believes that strong basic academic skills are the student's passport to achieving school and job success. The following basic skill areas are particularly important: reading, writing, mathematics, computing, communicating, critical thinking, and study skills.

Many courses at LCC have minimum skill level requirements in reading, writing, and/or mathematics. These levels must be met before a student will be permitted to enroll in those courses. Skill levels are listed along with other prerequisites required for each course in the *College Catalog*, the *Course Schedule*, and on the College's World Wide Web home page <http://www.lansing.cc.mi.us/>. Students meet these skill prerequisites either by achieving the required scores on placement tests or successfully passing specific courses at LCC. (See *Other Options to Meet Skill Prerequisites* in this section for other alternatives.) Students who have attended LCC previously may need to take or retake one or more of the placement tests. An advisor or counselor can determine if this is needed. Students attending START (Student Testing and Registration Times) orientation are required to take the tests before attending START.

Any exceptions to prerequisites or skill levels are determined by the department offering the course.

What the Tests Are Like

Reading, writing, and some mathematics tests are administered on computers. The tests are adaptive, and each item's difficulty is based on the student's response to the preceding question. The tests are not timed. The average amount of time spent on a test is about 30 minutes, so students should allow about two hours for all skill placement tests.

The results of the tests are available immediately.

Where Testing Centers Are Located

Drop-in placement testing is available on-campus in the Assessment Center in room 2100 Gannon Vocational-Technical Building. For testing hours and information call (517) 267-5500. Placement tests are also available at the off-campus Learning Centers. Contact the off-campus Learning Centers or the LCC Extension and Community Education Office, (517) 483-1860, for more information.

Other Options to Meet Skill Prerequisites

Students who have taken the SAT, the ACT, or Advanced Placement courses should have their scores sent to the LCC Enrollment Services/Admissions Office. The results may satisfy the reading and/or writing or the mathematics prerequisites. The Advanced Placement examination results may also result in the awarding of credit for a specific course.

Students who have earned credits from an accredited college or university should have their official transcript sent to the LCC Enrollment Services/Admissions Office. An evaluation of transfer credits will determine if some of the courses meet skill prerequisites.

Students who have an earned degree (associate, bachelor, or higher) can have the reading and writing prerequisites waived. An official transcript from all institutions previously attended should be sent to the LCC Enrollment Services/Admissions Office.

Academic Advising for Student Success

Academic advisors and counselors are available to provide information on skill prerequisites, help students plan class schedules, discuss curriculum choices, and provide academic and personal support. Students are encouraged to meet with an advisor or counselor prior to their first semester and at least annually thereafter. As students progress in their program of study, advisors or counselors can identify courses that remain to be completed. Counseling and Advising has advisors and counselors in Room 2300 of the Gannon Vocational-Technical Center, (517) 483-1904.

In addition to these regular advising sessions, students are encouraged to confer with the advisors or counselors about transferring to another college. Advisors and counselors have information on most Michigan colleges and universities.

Academic advisors and counselors are also available during special advising times in the off-campus Learning Centers. Contact the Learning Center or the LCC Extension and Community Education office, (517) 483-1860, for additional information.

SPECIAL PROGRAM/SPECIAL CIRCUMSTANCE ADMISSION

Selective Admission Programs

The programs listed in this section are selective admission programs. Admission to selective admission programs is on a competitive basis, and these programs have program admission requirements beyond those required for admission to the College. Admission to Lansing Community College does not guarantee admission to a selective admission program. Students wishing to apply for admission to a selective admission program should contact the Enrollment Services Office for further information by calling (517) 483-1254, (517) 483-1258, or by writing 1111-ENROLLMENT SERVICES/ADMISSIONS OFFICE, LANSING COMMUNITY COLLEGE, PO BOX 40010, LANSING, MI 48901-7210

- Dental Hygienist Program, Associate in Applied Science
- Diagnostic Medical Sonography, Associate in Applied Science
- Fire Academy, Certificate of Completion
- Histologic Technician, Certificate of Completion

- Histologic Technology, Associate in Applied Science
- Mid-Michigan Police Academy, Certificate of Completion
- Music Commercial Performance, Associate in Applied Arts
- Music Management, Associate in Applied Arts
- Music Transfer, Associate in Applied Arts
- Nursing, LPN Option, Certificate of Achievement
- Nursing, RN Option, Associate in Applied Science
- Paramedic, Certificate of Achievement
- Radiologic Technology Program, Associate in Applied Science
- Sacred Music, Certificate of Achievement
- Stage Technology, Associate in Applied Science
- Surgical Technology, Certificate of Achievement
- Truck Driver Training, Certificate of Completion

International Applicants

International student admission procedures have been developed to create a positive experience for the international student, the service community, and the College community. Admissions requirements for international students are affected by U.S. Immigration and Naturalization Service (USINS) regulations. In accordance with USINS regulations, any individual who is not a United States citizen and who has been admitted to the United States in a temporary, nonresident status will be classified as an international student at Lansing Community College. Individuals who have refugee, immigrant, or resident alien status are not international students.

The visa classification of each international applicant determines the admission requirements and the attendance regulations applied to the applicant. For details on the requirements for international admission, the applicant should refer to the International Student Admissions Application Packet. To request the application packet, contact 1111-ENROLLMENT SERVICES/ADMISSIONS OFFICE, LANSING COMMUNITY COLLEGE, PO BOX 40010, LANSING, MI 48901-7210.

Admission to the College for all visa categories requires applicants to: (1) be at least 18 years old and (2) provide additional documents as required by the applicant's USINS visa classification.

International students who would like copies of documents submitted to Lansing Community College for admission purposes must request these copies no later than one year after the last semester of attendance in international student status with the College. Lansing Community College does not keep such documents beyond legally required time limits.

Admission to LCC as an international student will be considered after receipt of the application and all required documents. Applicants outside the United States are advised to apply as early as possible to allow for mail delays, to obtain visas and exit permits, and to make travel arrangements. All admission material from applicants outside the United States must be received by the College no later than eight weeks prior to the first day of walk-in registration for the semester of attendance.

The Admissions Office will provide to admitted applicants information regarding USINS regulations, academic advising, and College policies governing international students. Prior to registering for classes, international students will be asked to take tests administered to the general College population. If evaluation of these tests indicates a need for improvement of English language skills, the student will be required to enroll in appropriate language courses.

Admission procedures are established and reviewed by the International Student Services Committee. Any changes in the procedures will be brought to the attention of the Dean of Student and Academic Support, students, applicants, LCC staff, and the service community.

The International Student Services Committee has been established in the Division of Student and Academic Support with the following membership:

1. International Admissions Specialist (Chairperson)
2. Director of Admissions
3. Director of International Programs
4. Bilingual Coordinator
5. International Student Counselor
6. A member of the teaching faculty

Dual Enrollment Program

This program is designed to provide an opportunity for qualified high school juniors and seniors to earn college credit. High school credit may or may not be granted according to the discretion of the participating high school. Dual enrollment affords students educational enrichment in specific areas where unusual ability and interest are displayed, especially in courses and academic areas not available in the students' high school.

Qualifications for the Dual Enrollment Program

Applicants must:

1. Be working toward high school graduation requirements;
2. Have attained junior or senior high school standing prior to applying for the program.

Application Procedures for the Dual Enrollment Program

Applicants must:

1. Complete a College application;
2. Submit written approval from their authorized high school official each semester of attendance;
3. Mail or bring the application and letter of authorization to the LCC Enrollment Services/Admissions Office prior to enrolling in classes. Applicants may also submit an online application via the internet at our web address <http://www.lansing.cc.mi.us>.
4. Comply with basic skills assessment and any additional approvals or prerequisites established by the department for the course(s) in which the student wishes to enroll.

(See *Appeal Process for Denial of College Admission* for appeal procedures.)

Special Admission Program

This program is designed to provide an opportunity for qualified high school freshmen and sophomores to earn college credit. High school credit may or may not be granted according to the discretion of the participating high school. The Special Admission Program affords students educational enrichment in specific areas where unusual ability and interest are displayed, especially in courses and academic areas not available in the student's high school.

Qualifications for the Special Admission Program

Applicants must:

1. Be working toward high school graduation requirements.
2. Have attained freshman or sophomore high school standing prior to applying for the program.
3. Have attained 14 years of age by December 1 of the student's freshman year.

Application Procedures for the Special Admission Program

Applicants must:

1. Complete a Special Admission Supplemental Application for each class in which the student intends to enroll;
2. Submit an official high school transcript each semester of attendance;
3. Obtain written consent from the student's parent/guardian and his/her authorized high school official each semester.
4. Mail or bring the Special Admission Supplemental Application(s) and transcript to the LCC Enrollment Services/Admissions Office prior to enrolling in classes.
5. Comply with basic skills assessment and any additional approvals or prerequisites established by the department for the course(s) in which the student wishes to enroll.

Special admission is contingent upon receiving departmental/divisional approval for each class for which the student intends to enroll.

(See *Appeal Process for Denial of College Admission* for appeal procedures.)

Nonpublic Home School Program

The Nonpublic Home School Program is designed for students who are at least 14 years old and attend a nonpublic home school. This program is provided to supplement the student's educational plan and to afford educational enrichment in courses and academic areas not available in the student's home school setting.

Qualifications for the Nonpublic Home School Program

Applicants must be at least 14 years of age prior to applying for the program.

Application Procedures for the Nonpublic Home School Program

1. Applicants 16 and 17 years of age must complete an LCC Nonpublic Home School Program Application each semester. Applicants 14 or 15 years of age must obtain department/division approval and complete an LCC Nonpublic Home School Program Application for each course in which the student wishes to enroll each semester.
2. Written consent from the student's parent/guardian and approval from the home school provider is required on the application.

3. Applicants must meet with a Counselor to discuss the student's educational plan each semester.
 4. All students must comply with basic skills assessment and any additional approvals or prerequisites established by the department for the course(s) in which the student wishes to enroll.
 5. Applicants must mail or bring the completed application to the LCC Enrollment Services Office prior to enrolling in classes.
- (See *Appeal Process for Denial of College Admission* for appeal procedures.)

Guest and International Guest Applicants

Guest and international guest applicants must:

1. Obtain a guest application from the Registrar's Office of the student's primary college;
2. Submit a completed guest application form to LCC each semester they wish to continue in the guest admission category;
3. Mail or bring the guest application to the Enrollment Services/Admissions Office prior to enrolling in classes.

(See *Appeal Process for Denial of College Admission* for appeal procedures.)

APPEAL PROCESS FOR DENIAL OF COLLEGE ADMISSION

Applicants denied admission to the College may appeal the denial. The decision to admit or uphold denial of admission will be based upon the individual merits of the appeal. Appeals submitted with insufficient time to complete the appeal process (eight working days) by the first day of class will be reviewed for the following semester. The appeal process shall consist of the following steps:

STEP 1: Admissions Staff Member

If an Admissions staff member denies admission to an applicant, the Admissions staff member shall provide the applicant with a copy of the appeal process. If the applicant wishes to appeal the denial, the staff member shall arrange an appeal meeting with the Director of Admissions within two working days of the denial.

STEP 2: Director of Admissions

(If admission was originally denied by the Director of Admissions, the applicant may move directly to Step 3 of the appeal process.) The applicant must submit his or her appeal in writing to the Director of Admissions at least one working day prior to the appeal meeting. The Director of Admissions shall render a decision to the applicant within two working days of the appeal meeting and provide the applicant with a written copy of the decision. If the appeal is denied, the Director of Admissions shall discuss Step 3 of the appeal process with the applicant. If the applicant wishes to appeal the denial, the Director of Admissions shall assist the applicant in contacting the Appeals Coordinator.

STEP 3: The Board of Appeals

The Appeals Coordinator shall convene the Board of Appeals within three working days of the applicant's appeal to the Board and advise the applicant of the date, time, and location of the appeal meeting. The Board of Appeals Chairperson shall notify the applicant of the Board's decision within three working days from the date of the applicant's appeal meeting and shall provide the applicant with a written copy of the decision. The Board of Appeals shall consist of the following members:

- A. The Director of Student Relations
- B. A member of the teaching faculty
- C. A counselor
- D. Appeals Coordinator or his or her designee (as recorder and nonvoting member)

The appeals process for international students shall have the following modification in membership:

- STEP 1: International Admissions Specialist or his or her designee
- STEP 2: Director of Admissions
- STEP 3: Board of Appeals

The International Student Board of Appeals shall consist of the following members:

- A. The Dean of Student and Academic Support (Chairperson) or his or her designee
- B. A member of the teaching faculty

- C. Bilingual Coordinator or Director of International Programs
- D. Appeals Coordinator or his or her designee (as recorder and nonvoting member)

The decision of the Admissions Board of Appeals is final and will be reached by simple majority vote. A copy of the Board of Appeals decision shall be maintained in the Admissions Office for two years.

HOUSING

Lansing Community College maintains no housing units for students, nor does it enter into third party contracts or supervise off-campus housing. However, the Student Life Office does offer a housing resource listing service. This service provides current available listings of Lansing area housing for sharing, sale, or lease. For more information, contact the Student Life Office at (517) 483-1285, or visit Room 2473 in the Gannon Vocational-Technical Center. There is no fee for this service.

FINANCIAL AID INFORMATION

The Enrollment Services/Student Financial Aid Office at Lansing Community College is committed to providing students with financial resources for higher education. An objective method of need determination approved by the federal government is used to award need-based programs. However, some scholarships are available based on academic achievement or talent, and low interest loan programs are also available.

Students are eligible to apply for financial assistance if they have graduated from high school, have completed a GED, or have demonstrated, through testing, the ability to benefit from courses or programs at Lansing Community College. They must enroll in LCC programs of study leading to an approved educational credential and must be a U.S. citizen or eligible noncitizen. A student enrolling in a program of study abroad that is approved for credit by Lansing Community College is eligible for federal student financial aid consideration.

SOURCES OF FINANCIAL ASSISTANCE

Financial aid programs are funded from federal, state, college, and private sources. The four major sources of financial aid are scholarships, grants, loans, and employment. Most students receive a combination of these forms known as a financial aid "package." Need-based programs require the submission of the Free Application for Federal Student Aid (FAFSA). Please see "How and When to Apply."

Scholarships and Awards

Resources that do not have to be paid back, usually awarded for academic achievement or talent that may or may not be based on need.

- Board of Trustees Awards are awarded to outstanding district high school graduates.
- Divisional Awards are awarded to outstanding students who are residents of the district and who apply directly to the College division or department in which the student wishes to study. Students may contact the Enrollment Services/Student Financial Aid Office for information.
- Athletic Scholarships are awarded through the Athletic Department. Talented athletes should contact coaches in their respective sport areas.
- Michigan Competitive Scholarships are based upon a qualifying examination given during the junior and senior years in high school. Students may receive an "honorary" award not based on need or a monetary award based upon need.
- Private Scholarships are available through the College or private organizations. Please consult the Enrollment Services Office for information about private scholarships, grants, loans, employment, and college transfer scholarships available to LCC students.
- Foundation Scholarships are provided through the Lansing Community College Foundation Office.
- Michigan Merit Award Scholarships are based upon the successful completion of the Michigan Educational Assessment Program (MEAP) for high school seniors.

Additional information on these as well as a free scholarship search service are available at <http://www.lansing.cc.mi.us/sas/finaid/>.

Grants

Money that does not have to be paid back, usually based upon need.

- Federal Pell Grants are based on need and range from \$400 to \$3,750 (subject to change).
- Federal Supplemental Educational Opportunity Grants are awarded to high need students who receive Federal Pell Grants.
- Michigan Educational Opportunity Grants are awarded to needy students who have been Michigan residents for at least 12 consecutive months.
- Michigan Adult Part-time Grants are awarded to self-supporting, part-time (3-11 credits), needy students who have been out of a high school program for at least two years and who have been Michigan residents for the past 12 months.
- Michigan Tuition Incentive Program (TIP) pays in-district community college tuition and fees for students from low-income families who meet the basic criteria and low-income financial guidelines. Eligible students must be United States Citizens and residents of Michigan according to institutional criteria, must be under 20 years of age, and must apply for certification to the State of Michigan prior to graduation from high school or completing the General Education Development (GED) Certificate.
- Lansing Community College grants are awarded to needy students who do not qualify for Federal Pell Grants on a funding available basis.
- Lansing Community College's Women's Resource Center Grants are available for tuition and child care for displaced homemakers and special populations. Students apply through the Women's Resource Center, Student Personnel Services Building, 2nd floor.
- Center for Aging Education Tuition Assistance is available to persons 60 years of age or older for up to four (4) credits per semester. Students must meet moderate income guidelines. Students apply through the Enrollment Services Department at (517) 483-1200.

Loans

Money that must be repaid beginning six months after graduation or enrollment of less than half-time (six credits for Fall and Spring semesters, three credits for Summer semesters), with the exception of the PLUS loans which must begin repayment sixty (60) days after the final disbursement.

- William D. Ford Federal Direct Student Loan Program includes both Subsidized and Unsubsidized Student Loans and the Parent Loan for Undergraduate Students (PLUS). Specific guidelines pertaining to eligibility and the application process are available in the Enrollment Services/Student Financial Aid Office.
 1. Subsidized and Unsubsidized William D. Ford Direct Student Loans are available for students who meet eligibility requirements. Students apply by completing and submitting a Free Application for Federal Student Aid (FAFSA), an LCC Admissions Application, and an LCC application for William D. Ford Direct Subsidized and Unsubsidized Student Loans.
 2. Parent Loans for Undergraduate Students (PLUS) are available to parents of undergraduate dependent students to pay college costs not covered by other financial aid. Applications for William D. Ford Direct PLUS loans are available in the Enrollment Services/Student Financial Aid Office. This is a credit-based loan.
- MI-LOAN is a Middle Income Loan provided by the State of Michigan. This is a credit-based loan.
- Short-Term Loans are available from Lansing Community College on a limited basis through the Enrollment Services/Student Financial Aid Office.

Student Employment

Job opportunities are available to assist students in earning money to meet part of their educational expenses. Employment at the College is based upon skills and abilities and not necessarily upon need. Students may be employed by the College, public nonprofit organizations, private businesses and industry.

- Federal Work Study is awarded to needy students.
- Michigan Work Study is awarded to needy students who are Michigan residents.
- Career and Employment Services at LCC posts federal work study jobs, student employee jobs, and off-campus part- and full-time jobs. Students obtain information at the Career and Employment Services Office and must interview at the department's or employer's office.
- Community Service Learning off-campus employment opportunities are available to students who are awarded Federal Work Study. Inquiries regarding these employment opportunities should be made to the Career and Employment Services Department.

Special Situation Funds

The College's Enrollment Services/Student Financial Aid Office has information regarding the availability of funds and application procedures for the following programs:

- Armed Services
- Veterans' Benefits
- Children of Disabled or Deceased Veterans
- Federal Bureau of Indian Affairs
- Michigan Indian Tuition Waiver
- Michigan Rehabilitation Services
- Clubs, Organizations, and Business Scholarships
- Private Donor Scholarships

HOW AND WHEN TO APPLY

Students wishing to receive financial aid at Lansing Community College should submit a Free Application for Federal Student Aid (FAFSA) no later than February 15 for priority State aid consideration and at least three months prior to enrollment for all other aid programs. Federal income tax information is necessary to complete the form. FAFSA forms are available at LCC or from high school counselors. There are two options available for submission:

1. The completed FAFSA form may be submitted via the internet (FAFSA on the WEB). The URL is <http://www.fafsa.ed.gov>. All necessary instructions are provided. Please note all signature requirements. The Fastlink lab, located in the Enrollment Services Office, is available for students to enter the application. Staff are available to assist students with filing the application. The Student Aid Report (SAR) results are then mailed to the student. Processing time is approximately 14 to 21 working days after the student enters the application. Call (517) 483-1200 to schedule an appointment.
2. The completed FAFSA form may be mailed in the enclosed envelope to the federal processor. In four to six weeks the processor will send a Student Aid Report (SAR) to the student. The Financial Aid Office at LCC must receive these results to award aid. LCC must be listed as a college choice on the FAFSA in order for LCC to receive the information electronically. The Title IV code to list LCC as a college of choice is 002278.

Students will receive an Award Letter no later than fourteen days after their results are received and their financial aid file is completed. Application for Financial Aid must be completed each academic year that a student plans to attend college.

To apply for financial assistance at the College, new students must also complete the LCC Application for Admission and return it to: 1111 ADMISSIONS, LANSING COMMUNITY COLLEGE, PO BOX 40010, LANSING, MI, 48901-7210. All students must complete the Free Application for Federal Student Aid (FAFSA) and submit the application to the federal processor prior to being awarded.

William D. Ford Federal Direct Student Loans (Subsidized, Unsubsidized, and PLUS) are available by completing the aforementioned forms and the loan application form. Loan applications are available in the Enrollment Services/Student Financial Aid Office.

LCC Board of Trustees Scholarship forms are available through district high schools' counseling offices. Scholarship forms are also available at the LCC Enrollment Services Office.

Divisional Scholarships are available from the respective College division or department of the student's major area of study.

The LCC Foundation has scholarships available throughout the year. Please consult the Enrollment Services/Student Financial Aid Office or call the LCC Foundation Office at (517) 483-1985 for additional information.

Processing of the student's application for financial assistance will be completed, and the student will be notified when the student has submitted the LCC Application for Admission to the Enrollment Services Office and the results of the federal application for student financial assistance have been received. Students transferring from other colleges mid-year must submit a Financial Aid Transcript from their previous colleges when they apply for financial assistance, along with any additional documents requested by the Enrollment Services/Student Financial Aid Office.

The amount of the student's award will be based on a standardized cost of attending LCC, less the expected student's and family's contribution. The College will attempt to meet a student's need based upon available funds. All financial assistance applications are confidential.

RIGHTS AND RESPONSIBILITIES OF STUDENTS RECEIVING FINANCIAL AID

As a recipient of financial aid, a student enters into an agreement with Lansing Community College which affects the receipt and continuation of assistance. Therefore, students should be sure to read this information carefully.

NEED AND FINANCIAL AID PACKAGE

Financial need is determined by subtracting the expected family contribution (as determined by the FAFSA) and other financial resources from the appropriate College budget. The College will attempt to meet the student's need within the limitations of available resources. Also, if any errors are made by the College in determining eligibility for assistance or awarding of aid, they will be corrected. Should any major changes occur in the student's financial circumstances or should other aid be provided to the student, the student will report these changes to the Enrollment Services/Student Financial Aid Office.

EXPECTED FAMILY CONTRIBUTION

If a student is a dependent student (as determined by the FAFSA), the College and the federal government assume that parents and students have the primary obligation to provide for the student's cost of education to the extent that they are able, based on a standardized method of determining parental contribution. The second obligation falls upon the student to contribute to his or her own education from personal assets and earnings which may include the use of student loan funding.

If a student is a self-supporting or independent student (as determined by the FAFSA), the College assumes that since a student is the prime beneficiary of education, the student has a primary obligation to provide for the cost of education to the extent the student is able, based on a standardized method of determining student contribution. The student's expected contribution will come from personal earnings, spouse's earnings, if applicable, savings and assets which may include the use of student loan funding.

SELECTION CRITERIA

Students are awarded need-based financial aid on a first-come first-served basis. Students with the highest need are selected first until available funds are exhausted. Students with bachelor's degrees may receive Federal Work Study if funds permit. These students may also apply for Federal Direct Student Loans.

FALSIFICATION OF INFORMATION

Falsification of information submitted by the student or parents for the purpose of receiving financial assistance may result in cancellation of assistance, billing back for assistance received, and referral to the appropriate federal authorities. If you purposely give false or misleading information, you may be fined \$10,000, sent to prison, or both by the federal government.

The Enrollment Services/Student Financial Aid Office may be required to verify information provided on the FAFSA form by requiring income tax statements or other documentation of financial status.

CREDIT HOUR LOAD

Fall and Spring Semester

Financial aid is offered to students based on enrollment as a full-time student, 12 credit hours or more per semester. However, if a student enrolls for fewer than 12 credits, his or her award may be prorated to meet enrollment costs. For example, if a student enrolls for 9-11 credits, he or she would receive 75 percent of his or her award. If a student enrolls for 6-8 credits, he or she would receive 50 percent of his or her award. If a student enrolls for fewer than six credit hours, he or she may be eligible for some federal programs. An independent student enrolled for 3-11 credits may be eligible for the Michigan Adult Part-time Grant.

Summer Session

Summer Session is shorter than Fall and Spring Semesters. Six credits is considered full-time for financial aid purposes, five credits is considered three-quarter time, and three credits is considered half-time. Enrollment for fewer than three credits will make a student ineligible for most financial aid. The length of the summer session also makes a difference in the calculation for the maximum financial

aid allowable for that period. Generally, the amount of financial aid will be less for a student enrolled in the summer session compared to the regular fall and spring semesters.

SHORT COURSE ELIGIBILITY

Payment for courses that are less than a semester in length is permitted. Students who enroll in a short course, receive payment for the course, and then do not attend will be required to repay any financial assistance attributed to that course. In addition, students who receive payment for a short course that is subsequently canceled will be required to repay any financial assistance attributed to that course.

STUDENT BUDGETING OF THE FINANCIAL AID PACKAGE

The student is responsible for properly budgeting all financial aid offered for each semester. The financial aid package will be distributed to the student in the following manner:

1. ALL student financial aid will be applied toward tuition and fees during registration. If sufficient funds are available after tuition and fees are paid in full, the student will receive a financial assistance advance check during the first full week of classes for part of the balance of grants, loans, or scholarships; and
2. The student will receive any remaining balance of grants, loans, or scholarships approximately 14 days after the first day of the semester.

The student must be prepared to meet his or her living expenses during the period prior to check distribution.

FINANCIAL AID REFUNDS

Check Distribution

Checks are issued two times each semester. They will be mailed if financial aid awards exceed the amount of tuition and fee charges. Students use this money for books, supplies, transportation, and room and board. Book advance checks are printed during the first week of the semester. Book advance checks are automatically calculated for financial aid students if their awards are complete and if they are registered by the last day of on-campus registration. The book advance check will be calculated by subtracting the amount of tuition and fees owed for the semester from the adjusted amount based on credit enrollment and writing a check for a portion of the remainder.

Final checks are printed for delivery by the 14th day of the semester. Students who receive an advance check normally receive a final check.

COLLEGE WORK STUDY/STUDENT EMPLOYMENT

If a student has been offered Federal Work Study or plans to use campus employment to meet expenses, the student must first secure employment through the Career and Employment Services Office (Room 211, Gannon Vocational-Technical Center). Students will receive a paycheck every two weeks based upon hours worked.

FINANCIAL AID TUITION REFUNDS/WITHDRAWALS

Tuition refunds for financial aid students are based on federal regulations. In addition, federal refunds are calculated for students who completely withdraw through the 60 percent period of the semester. Effective Fall semester 2000, federal refunds are calculated by calendar days and the student will owe a portion of unearned Title IV funds. Tuition refunds and federal refunds are returned in the following order for any programs received that semester:

- a. Unsubsidized FFEL loans
- b. Subsidized FFEL loans
- c. Unsubsidized (other than parent loans) Federal Direct loans
- d. Subsidized Federal Direct loans
- e. Federal Perkins loans
- f. FFEL PLUS loans
- g. Federal Direct PLUS loans

If excess funds remain after repaying all outstanding loan amounts, then the remaining amount is credited to grant programs in the following order:

- a. Federal Pell Grants
- i. Federal SEOG

- j. Other Title IV assistance for which a return of funds is required
- k. State financial aid awards
- l. Institutional financial aid awards
- m. Private or public donor awards
- n. Other institutional awards
- o. Student

An administrative fee of the lesser of five percent of the refund or \$100 will be held by the College.

REPAYMENT OF GRANTS

If a student withdraws from Lansing Community College or is withdrawn by the College because of nonattendance, a portion of any grants paid to the student may have to be repaid, and grades received for these courses may affect continuation of aid.

SATISFACTORY ACADEMIC PROGRESS POLICY FOR FINANCIAL AID ELIGIBILITY

To receive or continue on financial assistance, students must maintain satisfactory academic progress (SAP) each semester. Satisfactory academic progress for students receiving financial assistance is defined as follows:

1. Students must maintain a grade point average (GPA) of a 2.0 or above on a semester and cumulative basis.
2. Students must earn 70 percent or more of all credits attempted on a semester and cumulative basis. Credit "earned" is defined as a grade of 1.0 or higher or P. Grades of W, I, Z, N and 0.0 are considered attempted and not earned for determining financial aid satisfactory academic progress. Credit attempted includes all repeated courses.
3. Students must complete all requirements for their educational program within 150 percent of the minimum number of credit hours required for their educational program. This limit is further explained below under the heading *Maximum Eligibility*.

Satisfactory Academic Progress for Federal or State Loan Programs

Students applying for a federal or state loan program—including the Federal William D. Ford Direct Student Loan and the Michigan MI-Loan—must have completed at least one semester of prerequisites or core courses with a 2.0 or higher GPA and at least 70 percent completion of attempted credits prior to applying for a loan. A student borrower must earn a minimum of six credits, maintain a 2.0 minimum GPA each semester of the loan period, and maintain at least 70 percent completion of cumulative credits attempted. Students who do not meet these minimum guidelines will have any remaining scheduled loan disbursements canceled.

Financial Aid Academic Probation

New students receiving financial aid at Lansing Community College for one semester or its equivalent who do not make satisfactory academic progress will receive an academic warning letter instructing them to meet with an academic counselor. They will remain eligible to enroll and receive assistance for an additional semester.

Federal regulations state that an Academic Progress Policy must include a review of all periods of enrollment whether or not aid was received. Students who fail to maintain satisfactory academic progress in accordance with GPA or completion percent may be allowed to re-enroll on financial aid under a Success Contract (educational agreement). While on a Success Contract, a student will be considered to be making satisfactory academic progress for financial aid programs, excluding loans, as long as the student abides by the terms of the educational agreement which includes at least one mandatory meeting with an academic counselor by mid-term of the semester for which the Success Contract is signed for or until the student has raised his or her cumulative grade point average to a 2.0 or greater and has completed at least 70 percent of all credit hours attempted.

Students who do not successfully complete the semester of their Success Contract will have their future semesters of financial aid canceled subject to the appeals process described below.

Students with cumulative GPAs lower than 2.0 and/or students who have earned less than 70 percent of credit hours attempted after thirty-six (36) attempted credit hours will have their financial aid eligibility canceled. Eligibility for financial aid may be automatically reinstated after a student completes sufficient credit hours to raise his or her cumulative GPA to a 2.0 or above and cumulative credit

completion to 70 percent or higher financed with his or her own resources. This is subject to all maximum eligibility requirements.

Appeal of Unsatisfactory Academic Progress

A student failing to maintain satisfactory academic progress who is placed on probation or terminated from financial aid may appeal this action. All appeals must be submitted in writing to the Enrollment Services/Student Financial Aid Office and should document circumstances beyond the student's control. Extenuating circumstances that may be considered include personal illness or accident, serious illness or death within immediate family, long-term absence from school, or other circumstances beyond the reasonable control of the student. The condition or situation must be documented by a letter from a physician, attorney, social services agency, licensed therapist or counselor, or clergy or an obituary notice or divorce decree. The condition or situation must have existed or occurred during a period the student was enrolled at Lansing Community College and must no longer exist.

Reinstatement of Financial Aid Eligibility

A designated financial aid advisor, in consultation with at least one other financial aid advisor or administrator, will review the appeal and supporting documentation and notify the student in writing of the decision. Results of an appeal may include denial of reinstatement, reinstatement with restrictions such as limiting credit load to part-time or requiring 100 percent completion of enrolled credits, up to full reinstatement without further probation if the student has regained satisfactory academic progress.

Maximum Eligibility

Students who have attempted 150 percent of the credit hours required for their program of study at Lansing Community College are not considered to be making satisfactory academic progress and are no longer eligible for financial assistance beyond this maximum time frame. Transfer students will not be awarded financial aid beyond 150 percent of the credit hours required for their program of study, including credits transferred into the College which meet program requirements.

Exceptions to Maximum Eligibility time frame: Since many programs of study require substantially more than the minimum number of credit hours for a general associate degree, financial aid applicants will be reviewed on an individual basis if and when they approach 150 percent of their program, including any transfer credits. Students who have had to complete prerequisite, developmental, or English as a second language (ESL) course work in preparation for regular academic program requirements may have these credits excluded in the measurement of the 150 percent maximum time frame.

Students requesting financial aid consideration for semester(s) beyond 150 percent of their program will be required to document in an academic completion plan (ACP), approved by a lead academic advisor, reason(s) why they need additional credits to complete their program of study.

APPEALS

It is the student's right to appeal in writing or in person any decisions made regarding the assistance application or package. The student may meet with a financial assistance advisor to discuss his or her package. The student may meet with a financial assistance advisor to discuss extenuating circumstances to above policies or any other policies affecting the student as an assistance recipient. Extenuating circumstances are those considered beyond the student's control and must be documented. A financial assistance review committee will meet periodically to consider written appeals.

RIGHTS TO INFORMATION

It is the student's right to obtain information pertaining to financial aid programs available through the College and to discuss with a financial aid advisor information pertinent to the student's assistance application, file folder (records), and assistance package. However, all student information is confidential and will not be released over the telephone or to anyone other than the student.

RENEWAL OF FINANCIAL ASSISTANCE

Financial assistance is not automatically renewed. Awards are granted for one academic year only. A student must reapply for assistance for the following year by completing all required application forms by stated deadlines on the application.

For renewal, a student must be enrolled in a certificate or degree program.

To continue on financial assistance, the student must not be in default on any past educational loans at LCC or other colleges. Also, the student must not owe any repayments for educational grants due to withdrawing from college or being withdrawn from college because of nonattendance.

A student will not be awarded federal financial assistance at Lansing Community College beyond the maximum time frame of 150 percent of the credit hours required for his or her program of study. A transfer student will not be awarded federal financial assistance beyond the maximum time frame of 150 percent of the credit hours required for his or her program of study, including transfer credits accepted by LCC.

VETERANS INFORMATION

Enrollment Services/Veteran Services Office helps veterans file applications for education, counseling, loans, tutorial assistance, and/or any other entitlements allowed through the Veterans Administration. Lansing Community College is approved as a school for veterans of military service under provisions of Chapters 30, 31, 32, 35, and 1606 of the U.S. Code.

Lansing Community College cautions veterans matriculating under this program to be prepared to pay their expenses for at least two months after the beginning of the academic year. ALL TUITION AND FEES MUST BE PAID AT THE TIME OF REGISTRATION. Once the veteran's application is approved and the award processed, monthly checks will be issued if the veteran is prompt in maintaining satisfactory academic progress and following a chosen curriculum.

New student veterans and veterans wishing advance payment should apply at the Enrollment Services/Veteran Services Office at least five (5) weeks prior to the beginning of a semester. Monetary allowances provided for by the G.I. Bill vary according to the level at which the veteran is pursuing an academic program as indicated by the following schedule.

LEVEL OF ATTENDANCE	REQUIRED CREDIT HOURS
Full time	Minimum of 12
Three-quarter time	9, 10, or 11
Half time	6, 7, or 8

After enrollment, veterans should direct their inquiries concerning eligibility to the Enrollment Services/Veteran Services Office in the Student and Academic Support Division.

Lansing Community College, in recognition of the special needs of active-duty service persons in having access to and completing programs, has been designated as a Servicemembers Opportunity College.

In addition, the College participates in the Army College Fund, Michigan National Guard Co-op, Air Force ROTC Program, Army ROTC Program, and USMC Open Admissions Program.

Satisfactory Progress for Veterans' Benefits Eligibility

In compliance with Veterans Administration statutory requirements of subparagraph 56, section 1775 of chapter 36, Title 38 U.S. Code, Lansing Community College student veterans' benefits recipients will not be certified as eligible for benefits when their academic progress (cumulative grade point average) places them in the academic warning range (probation) beyond two semesters of enrollment. Re-certification of eligibility for benefits will not be considered unless the veteran submits a Success Contract or until after the semester in which the student regains academic good standing (see *Satisfactory Academic Progress Policy*). Veterans must submit signed documentation that they have met with a Counselor by midterm as agreed to on the Success Contract.

Certification Policy for Veterans Administration Educational Benefit Recipients

Lansing Community College will notify the U.S. Department of Veterans Affairs if a student receiving veteran's educational benefits is awarded a grade of 0.0, "I", "W" or "Z" for course work pursued. It is the recipient's responsibility to notify the Enrollment Services/Veteran Services Office of all enrollment changes (drops) including the non-attendance of any or all courses. In the event that a recipient fails to report these changes, the College will report the first day of the certified attendance period as the last date of attendance (in absence of other documentation). Recipients appealing this determination may provide documentation such as a statement signed by the instructor verifying course attendance. Veterans' educational benefit recipients neglecting to request an official evaluation for credits earned at colleges other than Lansing Community College and for active duty military service will not have their enrollment certified beyond their second semester of attendance.

REGISTRATION INFORMATION

REGISTRATION PROCEDURES

Each semester Lansing Community College publishes the *Course Schedule* which identifies courses offered for that semester. This booklet includes general information on the dates, times, and location of registration. Students may register for classes according to instructions which are published in the booklet.

Some courses require basic skills proficiency levels which must be met prior to enrollment. Students are strongly encouraged to arrange for orientation, testing, and advising prior to registration.

VIRTUAL COLLEGE

The Virtual College allows students to earn several associate degrees utilizing the power and connectivity of the Internet. These programs present a new learning option to students. Independent, highly motivated learners, as well as those who face time and place constraints, will find the option especially attractive. Students enrolled in LCC's Virtual College program will be guided by a dedicated staff of instructors whose courses have been specifically designed to deliver all the benefits of traditional learning along with other enhancements that may not otherwise be available. There is a \$10.00 course fee applied to all Virtual College sections beginning Summer 2001. See the current *Course Schedule* or visit the Virtual College Web site at <http://www.lcc.edu/distancelearning/> for more information about programs and registration.

TUITION AND FEES

Residency

I. Eligibility for Paying Resident Tuition

A. A student must be an American citizen, refugee, immigrant, or permanent resident and meet one of the following qualifications before being eligible to pay resident tuition.

1. The following applies to students under 18 years of age:

- The student's parents or legal guardians have resided within the LCC district for at least six months immediately prior to the first day of the semester.
- The student is married and has resided within the LCC district at least six months immediately prior to the first day of the semester.
- The student is unmarried and is recognized as "emancipated" (receives no financial support from parent or legal guardian) and has resided within the LCC district for at least six months immediately prior to the first day of the semester.

d. The student is enrolled under the provisions of Act 245, Public Acts of 1935, as amended by Act 371, Public Acts of 1965 (students receiving benefits under the Michigan Veterans' Trust Fund).

e. The student is an employee of a business or industrial firm within the LCC district, and the employer agrees in writing to pay directly to the College all tuition and fees of the sponsored student for employer-approved classes.

2. The following applies to students 18 years of age or older:

- The student has resided within the LCC district at least six months immediately prior to the first day of the semester.
- The student is an employee of a business or industrial firm within the LCC district, and the employer agrees to pay directly to the College all tuition and fees of the sponsored student for employer-approved classes.
- The student is enrolled under the provisions of Act 245, Public Acts of 1935, as amended by Act 371, Public Acts of 1965 (students receiving benefits under the Michigan Veterans' Trust Fund).

II. Proof of Residency

All students must provide proof of residency at the time of admission and registration (Michigan House Bill No. 4166, 1985). Lansing Community College reserves the right to make the final decision on residency eligibility. New students must verify residency at the time of admission. Current students whose mail is returned to the College are required to provide proof of residency in person prior to future enrollments.

Residency is based on where a student has resided for the six months immediately prior to the first day of the semester of enrollment. Any one of the following

documents is acceptable as proof of residency providing that the six months prior to the first day of the semester for which residency is being sought is covered.

- A. Current Michigan driver's license or State identification card issued not less than six months prior to the first day of the semester in which residency is being sought
- B. Paid property tax receipts
- C. Rental or lease agreement
- D. Utility bills with the student's name and address for each of the six months prior to the first day of the semester

III. Residency Classification

- A. Resident Students* — Students who provide proof of residency within the LCC district for the six months immediately prior to the first day of the semester of enrollment are charged resident tuition.
- B. Nonresident Students* — Students who provide proof of residency within the State of Michigan, but outside the LCC district for the six months immediately prior to the first day of the semester of enrollment are charged non-resident tuition.
- C. Out-of-State* — Students who provide proof of residency in a state other than Michigan for the six months immediately prior to the first day of the semester of enrollment are charged out-of-state tuition.
- D. International Students — Students who have been admitted to the United States in a temporary, nonresident status are charged international tuition. Individuals who have refugee, immigrant, or resident alien status are not international students
- E. Foreign nationals who are enrolling in Virtual College courses and reside outside the United States or are admitted to the United States in a temporary, nonresident status will be charged international tuition. U.S. Nationals who are enrolling in Virtual College courses and are outside the United States will be charged domestic tuition.

*International Students are not eligible for the resident, nonresident, or out-of-state residency classifications.

IV. Residency Status for Military Personnel and Dependents

Residency is based on the location of the present domicile of the applicant with the six-month requirement waived if the applicant can provide any of the documents listed below. This waiver is extended to the dependents (spouse and children) of the person named on the Department of Defense 214 or 899 who reside at the same address.

- A. Department of Defense 214, Separation from Active Duty Form, showing separation date within 120 days from the first day of the semester;
- B. Department of Defense 899, Change of Station Form, showing the Lansing area as the duty station;
- C. Department of Defense 899, Change of Station Form, showing a change of duty station for the head-of-household to an overseas destination or as the result of an emergency mobilization.

V. Petitioning for a Change in Residency Status

- A. If the student feels that his or her residency status is not correct, the student may furnish the required proof of residency and the residency status will be corrected.
- B. After acceptance into the College as a nonresident or out-of-state resident, a student who has resided in the College district for six (6) months and furnishes the required proof of residency can have his or her residency status changed.
- C. If a change of residency status is approved by the published deadline date and the student is eligible for a refund, the difference between the previous residency status and the new residency status shall be refunded.
- D. Adjustments in tuition due to a change in residency are not retroactive to previous semesters.

VI. Nonresident Owners of In-District Property

Nonresident students or their guardians owning property in the LCC district will receive credit once a year for property taxes paid in support of the College by himself or herself or his or her guardian. The taxes paid must be in support of the current academic year and the credit cannot exceed the differential between resident and nonresident tuition rates for the current academic year. To obtain this credit, the student must provide the Office of the Registrar with the paid property tax receipt.

Payment of Tuition and Fees*

All students attending Lansing Community College must pay tuition and fees at the time of registration or by the published payment deadline. Tuition and fees are as follows:

TUITION PER CREDIT HOUR*	
Resident Students	\$ 50.00
Nonresident Students	\$ 79.00
Out-of-State Students	\$108.00
International Students	\$108.00

Tuition for apprenticeship students varies according to the program of study.

FEES FOR ALL STUDENTS*	
Registration Fee (all students, each semester, not refundable)	\$20.00
Activities Fee (each semester)	
.01-6 credit hours	\$ 1.50
6.01-11 credit hours	\$ 4.50
11.01 or more credit hours	\$ 7.50

A fee will be charged for dishonored check or credit card transactions.

Course fees vary and are published in the *Course Schedule* booklet each semester.

*TUITION AND FEES ARE SUBJECT TO CHANGE THROUGH THE ACTION OF THE BOARD OF TRUSTEES.

Refund Policy for Semester-Length Courses

Fall and Spring Semesters and Summer Session

Withdrawal during first week of semester	100% of tuition and fees
Withdrawal during second week of semester	50% of tuition only
Withdrawal after second week of semester	No refund

Students receiving financial aid will receive refunds only if repayment to financial aid sources is not required.

Refunds are not retroactive to previous semesters. Questions relating to refunds should be addressed to the Cash Operation Office.

VARIABLE DATE COURSES

It is the student's responsibility to process all drops by the established deadline dates. To withdraw from class, the student must fill out a Drop Form in the Enrollment Services/Registrar's Office or through the department offering the course. Refunds are automatically issued for courses canceled by the College. The application and registration fees are nonrefundable.

UP TO AND INCLUDING THREE-DAY COURSES	
100% Refund*	Prior to start of course
Drop with no course shown	Prior to start of course
Change credit/audit status	Prior to end of course meeting

Students with a valid reason for exception to this policy may fax, mail, or present their support documentation to the Office of the Registrar or the department offering the course.

FOUR-DAY – LESS THAN EIGHT-WEEK COURSES	
100% Refund*	Prior to start of course
Drop with no course shown	Prior to start of course
Change credit/audit status	Through midpoint of course (using calendar date—beginning through ending dates of course)

Students with a valid reason for exception to this policy may fax, mail, or present their support documentation to the Office of the Registrar or the department offering the course.

EIGHT-WEEK – LESS THAN 12-WEEK COURSES

100% Refund*	During the first week of the course
50% Refund (of tuition only)	During the second week of the course
Drop with no course shown	During the third week of the course
Change credit/audit status	Prior to the end of the fourth week of the course

12-WEEK – LESS THAN 16-WEEK COURSES

100% Refund*	During the first week of the course
50% Refund (of tuition only)	During the second week of the course
Drop with no course shown	During the fifth week of the course
Change credit/audit status	Prior to the end of the sixth week of the course

*The 100% refund period for courses offered by BCI is seven (7) working days (or more) before the first day of class. The refund amount for classes dropped from two (2) to six (6) working days before the class begins is 70%. For classes dropped one (1) working day before the first day of class or later, there is no refund.

STUDENT CREDIT REQUIREMENTS

Student credit requirements are as follows:

FALL AND SPRING SEMESTERS

Full-time enrollment.....	12 credits
Three-quarters enrollment	9 credits
One-half enrollment.....	6 credits

SUMMER SESSION (8 WEEKS)

Full-time enrollment.....	6 credits
Three-quarters enrollment	5 credits
One-half enrollment.....	3 credits

CANCELED CLASSES

The College reserves the right to cancel classes which do not have sufficient enrollment. Students enrolled in classes that are canceled will have the opportunity to add another class or receive a refund.

SCHEDULE CHANGES

During the schedule change period specified in the *Course Schedule*, a student may make changes in his or her schedule. A student may withdraw from a course before the end of the sixth week of the semester without academic penalty. Drops will not be processed after the last day of the semester.

Schedule changes involve the following procedures which must be completely carried out by the student so that the student's records in the Enrollment Services/Registrar's Office may be accurately maintained:

1. Pick up a Drop-Add Form during the registration process or at the Enrollment Services/Registrar's Office.
2. Fill out the form completely with information requested.
3. Return the form to the registration assistant or to the Enrollment Services/Registrar's Office for proper recording. Do not leave until processing of the form has been completed and a copy has been received.

Departmental signatures and grade at time of drop are required on all drop forms after the sixth week of the semester or other equivalent dates as specified for variable length courses.

AUDITING COURSES

A student who registers as an auditor attends class regularly but does not take the final examination, does not receive an achievement grade, and does not receive credit for the course. Students wishing to audit must meet all prerequisites required for the course and indicate their intention to audit at the time they register for the course. Audited courses cannot be applied toward a degree or certificate and cannot be used to meet prerequisites.

The College allows students to change from *credit* to *audit* or from *audit* to *credit* by the end of the sixth week for 16-week classes (and other equivalent dates as specified for variable length courses). Students electing to change from *audit* to *credit* are responsible for having course work up to date at the time the change is made and must have instructor approval after the first week of the

semester. Changes from *credit* to *audit* through the end of the sixth week for 16-week courses (and other equivalent dates as specified for variable length courses) do not require instructor approval. In addition, students should be aware that exercising this option may have an impact on their financial assistance or on student employment at the College. Any student balance due created by a change in credit or audit status must be paid by the student. Changes in audit or credit status must be requested by the student through the Enrollment Services/Registrar's Office.

WITHDRAWAL**I. Student-Initiated Withdrawal**

- A. If a student finds it necessary to withdraw from the College, he or she should contact the Enrollment Services/Registrar's Office immediately and complete a drop-add form.
- B. If the withdrawal takes place within the established refund period for each semester, a student withdrawing will receive a refund.
- C. If a student withdraws from a semester-length class prior to the end of the sixth week of the semester (or other equivalent dates as specified for variable length courses), instructor approval is not needed, a final grade is not issued, and the withdrawn class is not recorded on the academic record. A copy of the student-initiated drop-add form is maintained in the Enrollment Services/Registrar's Office.
- D. A student may withdraw from a semester-length class after the end of the sixth week of the semester (or other equivalent dates as specified for variable length courses) only if he or she is completing the course requirements at a passing level (1.0 or higher) at the time the W is requested. If the instructor finds that the student was not able to apply for the W in a timely fashion, the instructor may grant the student's request for a W if the student was passing the course on the date of the event that caused the application for withdrawal. A student may withdraw from a class up until the last week of the class unless a different date is specified in the course syllabus. The instructor's signature is required to withdraw, and the student will receive a grade of W.

II. Administrative Withdrawal

It may be in the best interest of the student and/or the College community that a student be withdrawn from a class or a group of classes. This process is known as "administrative withdrawal."

An administrative withdrawal may be initiated by a classroom instructor in accordance with written procedures established by each department and with the co-recommendation of the respective departmental chairperson. An administrative withdrawal may be based on the following: (1) student nonattendance; (2) lack of prerequisites for a particular course; and/or (3) student behavior that interferes with the instructional process.

- A. When a student fails to meet the attendance requirements of the class, the instructor may initiate an administrative withdrawal through the Enrollment Services/Registrar's Office.
- B. When a student does not have the prerequisites for a particular course, the classroom instructor consults with the student regarding the potential of administrative withdrawal. The instructor has the right to initiate an administrative withdrawal through the Enrollment Services/Registrar's Office.
- C. When a student behaves in a manner that interferes with the instructional process, the classroom instructor consults with the student regarding the potential of administrative withdrawal and establishes guidelines in writing for retaining enrollment in the class. If the guidelines are not satisfactorily met by the student or if the student does not respond to an invitation to meet with the classroom instructor, the classroom instructor, with the co-recommendation of the appropriate departmental chairperson, may initiate an administrative withdrawal. The classroom instructor, with the co-recommendation of the appropriate departmental chairperson, may also recommend that a member of the counseling staff meet with the instructor and the student to review the circumstances of the student's behavior and to work out a possible alternative.

In all cases of administrative withdrawal, a student who is withdrawn from a semester-length class prior to the end of the sixth week of the semester (or other equivalent dates as specified for variable length courses) will not receive a grade, and a record of attempting the class will not appear on the academic record. A copy of the administrative withdrawal form is maintained in the Enrollment Services/Registrar's Office. After the sixth week of the semester (or equivalent date

as specified for variable length courses), the student will receive a W grade only if he or she was completing the course requirements at a passing level (1.0 or higher) up until the date of the event that caused the administrative withdrawal. If the student has not done passing work, he or she will receive a 0.0.

Any student who is administratively withdrawn may appeal the withdrawal. Lines of appeal for administrative withdrawal are presented in the catalog in the section entitled *Due Process* under the heading entitled *Student Appeals*.

III. Procedure for Resolving Health-Related Student Problems

In a situation in which a serious (physical or emotional) health-related problem becomes evident in a student, the College's responsibilities are to assist the student and take necessary action to maintain order consistent with a positive learning environment for other students. If a student's health-related behavior becomes disruptive or clearly inappropriate, the following procedures shall be followed:

- A. Call the Department of Public Safety and the Office of the Dean of the Student and Academic Support Division if:
 1. Emergency health services are required or
 2. It appears that there has been or is likely to be a violation of the law.
- B. Call only the Office of the Dean of Student and Academic Support if it appears that there has been a violation of a College regulation that is not also a violation of the law.
- C. If there is no apparent violation of the law or College regulation and no emergency exists, the student should be encouraged to seek help from an appropriate health or counseling office or agency, on or off campus. Assistance from the Office of the Dean of Student and Academic Support and/or College counselors should be sought if needed.
- D. If there appears to be a violation of the law or a College regulation, the Office of the Dean of Student and Academic Support (or designee) shall contact the counseling staff, and a member of the counseling staff will meet with the student and recommend:
 1. Continued counseling if the problem is within the ability of the Counseling Department to handle.
 2. Referral back to the Office of the Dean of Student and Academic Support when no health-related problem is evident or when it is determined that the Counseling Department can be of no further service.
 3. Referral to other appropriate professional assistance if the problem is beyond the ability of the Counseling Department to handle. If the problem significantly compromises the rights or safety of other persons at the College, or if a professional recommendation to withdraw the student is made, the Office of the Dean of Student and Academic Support may institute procedures for administrative withdrawal of the student from the College until he or she provides evidence from a licensed and appropriate health care professional stating that the student is able to function effectively with the stresses and demands of a College setting. The student may appeal the withdrawal decision to the Board of Appeals.
 4. Whenever possible, the counseling staff, working with the student's physician and/or relatives, shall make a recommendation to the student as to his or her future course of action.

ACADEMIC INFORMATION

ACADEMIC DEFINITIONS

The following are definitions of academic terms commonly used at Lansing Community College.

Associate Degree: The associate degree consists of a minimum of 60 semester credits in designated courses. It is earned with a minimum of a 2.0 cumulative GPA, successful completion of the LCC General Education Core, and is recorded on the official academic record. At least 20 semester credits must be earned in attendance at Lansing Community College.

Certificate of Achievement: The certificate of achievement consists of a minimum of 30 specifically designated semester credits in occupational areas. It is earned with a minimum of a 2.0 cumulative GPA and is recorded on the official academic record. At least 10 semester credits must be earned in attendance at Lansing Community College.

Certificate of Completion: The certificate of completion consists of fewer than 30 specifically designated semester credits in occupational areas. It is earned with a minimum of a 2.0 cumulative GPA and is recorded on the official academic record. At least one-third of the credits required for this certificate must be earned in attendance at Lansing Community College.

Credit Hour: A credit hour is an instructional unit carried out for the expressed purpose of eliciting some measure of educational change in a learner or group of learners. A credit can be awarded on a student's academic transcript when he or she successfully completes a unit of instruction of not fewer than 500 instructional minutes.

Course: A course is a sequence of planned learning experiences leading to a set of expected learning outcomes. Course activities are normally scheduled over an academic semester. A student's successful completion of a course earns academic credit based on contact hours in class or in laboratories. The student also earns an academic grade which evaluates the student's success in achieving the expected outcomes. A course routinely includes tests, quizzes, a final examination, and regular out-of-class assignments. At Lansing Community College, a standard college-wide course syllabus has been created for each course. A course is publicized in the *College Catalog* and the *Course Schedule*. A seminar, workshop, or fee-for-service learning/training unit is not a course.

Curriculum: A curriculum is a structured program of study. Each curriculum is assigned a number.

Major: A major is the predominant subject area within a curriculum.

Prerequisite: A prerequisite is a course or other requirement that must be successfully fulfilled prior to participation in a subsequent course or activity. It may also be a skill or behavior that is judged essential to learning a subsequent, more complex skill or behavior.

Program: A program is the organizational structure of the College which provides or delivers instruction and/or services.

GRADING SYSTEM

The following numerical system is used at Lansing Community College to evaluate academic work:

COLLEGE STANDARD	NARRATIVE EQUIVALENT	RECOMMENDED GUIDELINE FOR PERFORMANCE ACHIEVEMENT OF OBJECTIVES*
4.0	Excellent	91% to 100%
3.5		86% to 90%
3.0	Good	81% to 85%
2.5		76% to 80%
2.0	Satisfactory	71% to 75%
1.5		66% to 70%
1.0	Poor	60% to 65%
0.0	Failure	0% to 59%

* THIS GUIDELINE IS RECOMMENDED ONLY. STUDENTS SHOULD SEE THEIR INSTRUCTOR REGARDING THE GRADING SYSTEM USED FOR A SPECIFIC COURSE.

Instead of a numerical grade, students may receive an alphabetical letter for their course work if they have audited a course (X), withdrawn from a course (W), or did not complete course work (I). Specific regulations regarding these alphabetical letters are as follows:

1. "Incompletes" will not be counted toward the establishment of an earned grade point average (GPA) or toward graduation from Lansing Community College. All requests for incompletes are initiated by the student. An instructor may assign an "I" grade at the student's request when the following conditions are met: the student is unable to complete a course for some good and serious reason (for example, incapacitating illness, legal involvement that cannot be rescheduled, or changing work obligation), the student has demonstrated successful progress in class; and the student has completed approximately 80 percent of the course work. (Note: The 80 percent figure is a benchmark, since weighting of exams and other work varies among programs and courses. The intent is that only a small portion of the work remains.) When issuing an "I" grade, the instructor will also indicate what grade will be assigned if no further work is completed. All incompletes must be made up by the end of the next regular semester (Summer session is excluded) or earlier if an earlier date is established by the instructor or department. An extension may be granted if requested in writing by the student and approved by the instructor and department by the last day of the deadline; otherwise the "I" will be converted to the grade specified if no further work is completed.
2. An "X" (audit) grade is given when a student chooses to audit a course. No credit is granted, but enrollment is reflected on the student's academic record.
3. A "W" (withdrawal) indicates a withdrawal from a course with achievement in the course above the failure level at the time of withdrawal. If a request

for withdrawal from a semester-length class is received by the Office of the Registrar prior to the end of the sixth week of the semester (or other equivalent dates as specified for variable length courses), no grade will be recorded on the student's academic record. For withdrawals after the sixth week of the semester (or other equivalent dates as specified for variable length courses), a W is given only if the student has done passing work (1.0 or higher). If the student has not done passing work, he or she will receive a 0.0.

COMPUTING GRADE POINT AVERAGE

A student's grade point average is determined on the following basis:

NUMERICAL GRADE	GPA POINTS
4.0	4.0
3.5	3.5
3.0	3.0
2.5	2.5
2.0	2.0
1.5	1.5
1.0	1.0
0.0	0.0

"W", "X", and "I" grades are not included in calculating grade point averages. Thus, a student who receives five credit hours of 4.0, five credit hours of 3.0 and five credit hours of 2.0 would have a total of 45 GPA points. To compute the grade point average (GPA), the number of GPA points is divided by GPA hours (credits) taken during the semester.

PASS/FAIL GRADING (P-Z)

The pass (P)/fail (Z) grading system has been established as a departmental option. This system is reserved for special course offerings where a pass/fail grading system is most appropriate for the goals and objectives of the course.

1. Course prerequisites and other criteria for enrolling in courses offered on the P-Z grading system shall be determined by the department offering the course.
2. Courses using the P-Z grading system will be published as being graded on the P-Z grading system only, and the course syllabus shall be explicit regarding this fact.
3. Courses graded on the P-Z system may be counted toward an associate degree or certificate based on approval of the appropriate dean. A maximum of 10 percent of the total credits required for a degree or certificate may be acquired on the P-Z system.

Grading procedure of the pass/fail system is as follows:

1. Grades on the P-Z system are not included in computing the semester or cumulative grade average.
2. The grades granted on the P-Z system are determined with definition of "P" and "Z" as follows:
 - a. P (pass) represents a level of performance equivalent to a regular number grade of 2.0 or above on a 4.0 system; credit is granted.
 - b. Z (fail) represents a level of performance less than a 2.0 on a 4.0 system; no credit is granted.

All courses attempted on the P-Z grading system will appear on the student's academic record. Policies pertaining to the issuing of "W" and "I" grades also apply to courses graded on the P-Z system (see *Grading System* above).

REPEATING A COURSE

When a student repeats a course for a higher grade, the student's academic record and transcript will reflect every grade received for the course. However, only the highest grade is used in computing the LCC cumulative GPA and credits earned.

USING A COURSE MORE THAN ONCE FOR CREDIT TOWARD A DEGREE OR CERTIFICATE

In order to ensure that graduates from Lansing Community College are academically well rounded, students will not be allowed to use the same course more than once for credit toward a degree or certificate unless specifically required or permitted to do so by the curriculum they are following. Under no circumstances will a student be allowed to use the same course more than once for credit toward the General Associate Degree.

GRADE REPORTS

An official academic grade report will be mailed to the student approximately 7 to 10 business days after the close of each semester. The grade report will be withheld if the student has an overdue indebtedness to the College.

GRADE CHANGES

Students may petition an instructor for a grade change of a final grade in a course. The line of formal appeal for grade change petitions can be found in the College's Due Process statement. A student's final grade in a course may be changed by the course instructor. Grade changes by instructors are initiated by submitting signed grade change forms to the departmental office for review and approval by the departmental chair or lead faculty member. The completed grade change form is then forwarded to the Enrollment Services/Registrar's Office for posting on the student's permanent academic record. Completed grade change forms are not to be carried by the petitioning student to the Enrollment Services/Registrar's Office and will not be processed if they are so received. Students will be sent a grade report after a grade change has been completed.

ACADEMIC STANDING POLICY

Students must maintain at least a 2.00 cumulative Grade Point Average (GPA) at Lansing Community College to remain in Good Standing, which indicates satisfactory academic progress. Students whose cumulative GPA falls below 2.00 will be placed on either "Warning" or "Probationary" standing which indicate unsatisfactory academic progress. While on Warning or Probationary standing, the student may have limits on registration for classes. In addition, students on Warning or Probationary standing may be required to meet with a counselor and sign a Success Contract prior to registering. Students can return to Good Standing by earning a cumulative GPA of 2.00 or higher. Continuing to earn a GPA below 2.00 may result in being academically recessed from LCC.

NOTE: Only course work completed at LCC is considered for determination of academic standing. The academic standing is determined at the end of each semester (Fall, Spring, Summer).

Summary of Academic Standing Policy

- **Good Standing:** Cumulative Grade Point Average (GPA) 2.00 or above
- **Warning:** Cumulative GPA below 2.00; suggested that the student meet with a counselor
- **Probation:** Continued cumulative GPA below 2.00; registration limited to 12 or fewer credits for Fall and Spring Semesters and six or fewer for Summer Session, and student is required to meet with a counselor
- **Academic Recess:** Continued cumulative GPA below 2.00; student not eligible to register and must sit out one semester or Summer Session. Upon return following the semester of recess, a student must meet with a counselor to plan his or her academic success and sign a Success Contract. Satisfactory completion of this plan as well as semester-by-semester subsequent plans will allow further enrollment until a satisfactory cumulative GPA places the student in good standing.

Students receiving financial aid or veterans benefits are required to satisfy specific additional academic standards to continue receiving financial assistance. See the *Financial Aid* section of this Catalog.

Students in certain selective admission programs may have different standards for academic standing.

ACADEMIC AMNESTY

Lansing Community College recognizes that students are unsuccessful academically for a variety of reasons. Those students may return years later to find their low GPA is a barrier to fields they might otherwise be ready to enter. LCC has an Academic Amnesty Policy in order to allow such students a second chance. Qualified students may receive academic amnesty for a maximum of eighteen semester hours (or the quarter/term equivalent) of grades of 0.0. They will no longer be calculated into the student's GPA, and the "forgiven" grades will remain on the transcript along with a special notation explaining the Academic Amnesty Policy at LCC. The student must apply to the Registrar for academic amnesty, and the application must be signed by an academic advisor or counselor. In order for a student to qualify for academic amnesty, the following conditions must be met:

1. Five or more years must have elapsed since the last grade for which amnesty is requested.
2. The student must have earned twelve semester credit hours in courses numbered 100 or above at LCC and have a cumulative GPA of at least 2.0 since the last grade for which amnesty is requested.

3. Academic amnesty may be granted only once to any student and is irrevocable.
4. The Petition/Application for Academic Amnesty must be received by Enrollment Services/Registrar's Office by the 10th week of the semester for consideration and action by the end of the semester.

Academic amnesty, when granted, applies only to LCC courses—not to any courses at other institutions. Further, there is no guarantee, expressed or implied, that academic amnesty will be recognized by any other college, university, or employer.

STUDENT RECORDS

STUDENT TRANSCRIPTS

The Enrollment Services/Registrar's Office maintains the permanent official transcript of every student who attends the College. The transcript is a copy of the student's academic record and contains the signature of the Registrar. The transcript includes courses waived, courses attempted and completed, courses and credits transferred, credits awarded for experiential learning, credit hours, GPA points. Lansing Community College grade point average, current program and major, associate degrees, certificates of achievement, and certificates of completion awarded at the College.

Students may request that a copy of their official transcript be given or mailed to any party by submitting a request in writing to the Enrollment Services/Registrar's Office. Transcript requests require three working days to process, and a \$5.00 fee is charged for each transcript. A hold may be applied to the release of the transcript of any student or former student who has an indebtedness to the College.

RECORDS POLICY

Lansing Community College shall not distribute student lists to non-college agencies except as required by law.

In compliance with the Family Educational Rights and Privacy Act of 1974, Lansing Community College provides the following information.

1. Students and/or a parent of a student, if the student is a dependent, have the right to access, inspect, and review all educational records directly related to the student. Upon presentation of pictured identification and a written request from the student to the Enrollment Services/Registrar's Office in Suite 2200 of the Gannon Vocational-Technical Center, access to all educational records shall be provided within a reasonable period of time (not to exceed 45 days from the date the request is submitted).
2. Educational records include all information maintained by the College which is directly related to the student with the exception of:
 - a. Financial records of the student's parents.
 - b. Confidential letters of recommendation prior to January 1, 1975.
 - c. Confidential letters and recommendations associated with admissions, application for employment, or receipt of an honor or honorary recognition to which students have waived rights of inspection and review.
 - d. Educational records containing information about more than one student. However, the College must permit access to that part of the record which pertains only to the inquiring student.
 - e. Reports made by physicians, psychiatrists, or psychologists in connection with their treatment.
 - f. Records of instructional, supervisory, administrative, and certain educational personnel which are in the sole possession of the originator.
 - g. Records of the law enforcement unit of the College if compiled for law enforcement purposes.
 - h. Records which relate exclusively to individuals in their capacity as College employees.
3. Directory information may be released at the discretion of College officials for any student who has not submitted a completed Request to Prevent Disclosure of Directory Information form to the Enrollment Services/Registrar's Office. The disclosure prevention form remains in effect until the student provides a written release to the Office of the Registrar. Directory information includes but is not limited to:
 - a. Name of student
 - b. Date of birth
 - c. Dates of attendance
 - d. Enrollment status
 - e. Awards, degrees, or certificates received

- f. Participation in officially recognized activities
 - g. Sport, weight, and height of members of athletic teams
 - h. Previous educational agency or institution attended
- Copies of the Request to Prevent Disclosure of Directory Information form and the Family Educational Rights and Privacy Act are available upon request in the Enrollment Services/Registrar's Office and the Office of the Dean of Student and Academic Support.
4. Lansing Community College prohibits the release of personally identifiable information other than directory information from educational records without the student's written consent. Exceptions to this statement are listed below:
 - a. Academic and administrative officials, staff, and persons who have entered into a partnership or contract with Lansing Community College and whom the College has determined to have legitimate educational interest.
 - b. Other educational institutions in which the student is enrolled or intends to enroll.
 - c. Individuals and organizations who provide financial aid or scholarships to the student.
 - d. Authorized representatives of the Comptroller General of the United States, the Secretary of the Department of Health and Human Services, the Department of Veterans Administration, the Department of Education, and administrative heads of state and federal educational agencies authorized by law.
 - e. Accrediting organizations to carry out their accrediting functions.
 - f. Appropriate authorities in compliance with judicial orders and pursuant to lawfully issued subpoenas. The student shall be notified of any such orders or subpoenas unless the subpoena or order prohibits notification by the College. The College shall comply with the subpoena ten (10) days after an attempt to notify the student of the request.
 - g. Appropriate parties in an emergency if knowledge of the information is necessary to protect the health or safety of the student or other individuals.
 - h. Parents who have established the student's status as a dependent according to Internal Revenue Code of 1954, Section 152.
 - i. An alleged victim of any crime of violence of the results of any disciplinary proceeding conducted by the College against the alleged perpetrator of the crime.
 - j. Military recruiters for the purpose of federal military recruiting as stated in Public Law 104-206, Section 509(2).

Lansing Community College will maintain a record of each disclosure of identifiable information from the external individuals or agencies listed above. The record will be maintained in the Enrollment Services/Registrar's Office and will include the date, the name and address of the requesting party, the information requested, and the reason for requesting the information. The College reserves the right to correct any error made on an academic record or evaluation and will notify the student in writing of any record or evaluation correction. Staff of the College are subject to the requirements of the Family Educational Rights and Privacy Act of 1974, as amended.

Students have the right to request correction or amendment of information on educational records that are inaccurate, misleading or which violate privacy rights. Due process procedures for requesting correction or amendment to educational records are stated in the *College Catalog* under *Student Appeals*.

Students who feel their rights under the Family Educational Rights and Privacy Act have been abridged may file complaints with the Family Policy and Regulations Office, U.S. Department of Education, Washington, D.C. 20202.

TRANSFER OF CREDITS

A student expecting to transfer to a four-year institution is advised to examine the current catalog of the college he or she expects to enter and to follow as closely as possible its recommendations for particular programs of study. More specific information about transferring credits may be obtained from a counselor or advisor.

ACCEPTANCE AND EVALUATION OF TRANSFER CREDITS FROM OTHER INSTITUTIONS OF HIGHER EDUCATION

Only official transcripts will be evaluated for transfer credit. The credit value of each of the courses will be determined by Lansing Community College. The College will accept as official transcripts only incoming transcripts that have appropriate signatures and/or official college seals and that are mailed directly to the

Lansing Community College Enrollment Services/Admissions Office from an issuing institution. Transcripts or copies of transcripts carried by individuals may be used for academic advising or counseling, but transfer credits will NOT be posted to the Lansing Community College academic record from transcripts that are not received directly from the issuing institution. It is the function of the Enrollment Services/Admissions Office of the College to verify the official status of all incoming transcripts prior to the evaluation and posting of transfer credit. All transcripts submitted to LCC for evaluation become the property of LCC.

The following evaluation information applies to transcripts received from both accredited and non-accredited institutions of higher education. Additional evaluation information which applies to transcripts from non-accredited institutions may be found under the section entitled *Non-Accredited Institutions*. More specific information about guidelines and procedures for accepting credits in transfer may be obtained from the Enrollment Services/Registrar's Office.

Accredited and Non-Accredited Institutions

1. Freshman and sophomore level courses are accepted in transfer. Higher level credits are accepted if they correspond to a specific course at Lansing Community College. In most cases, an accepted course will be considered an equivalent of a corresponding Lansing Community College course or general credit. In cases where Lansing Community College does not have a department or area similar to the courses on incoming transcripts, no credit will be given. Credits for courses graded Pass/Fail are not accepted in transfer.
2. Credits only, not grades, are transferred. When the overall grade point average of a transferring student is at or above a 2.0 on a 4.0 scale, the 1.0-1.5 or "D" grades will be accepted. Credits transferred in to specifically fulfill LCC General Education Core requirements and MACRAO requirements, however, must be graded 2.0 ("C") or higher. When the transferring overall grade point average is below 2.0 on a 4.0 scale, only courses graded 2.0 ("C") or higher will be accepted. With the exception of credits transferred in to fulfill LCC General Education Core requirements, the student may petition the departmental chairperson of his or her academic department to waive a degree or certificate course requirement(s) in which he or she has previously earned the 1.0-1.5 or "D." Waiver of a course requirement does not provide credit for a course.
3. No evaluation is made when a student has received a two- or four-year degree from another institution. This may be done upon request, but it is assumed that the student is pursuing an entirely different curriculum and will not need previous course work.
4. A student may request a review of the evaluation if he or she feels that a course description differs from the way in which it was evaluated. A determination on the evaluation will be made by the departmental chairperson in conjunction with the Registrar. Verification of the change can be made through the Enrollment Services/Registrar's Office.

Non-Accredited Institutions

The following evaluation information applies to transcripts from non-accredited institutions:

1. The Enrollment Services/Registrar's Office will forward a transcript from a non-accredited institution to the departmental chairperson of the department in which the student has enrolled.
2. The departmental chairperson has the following four prerogatives in evaluating transcripts issued by non-accredited institutions:
 - a. Credit may be granted with demonstration by the student of skills commensurate with the performance required for satisfactory completion of existing courses.
 - b. Credit may be granted upon review of the content, goals, and objectives of a particular course with determination of whether the course is on a par with existing courses of the College. It is the responsibility of the student to provide requested materials to enable proper evaluation.
 - c. Credit may be granted upon demonstration of proficiency in a particular existing course by a comprehensive examination.
 - d. Credit may not be granted.
3. The departmental chairperson will return the transcript to the Enrollment Services/Registrar's Office and indicate in writing the credits granted and the course equivalency at Lansing Community College. The final transcript evaluation will have the signature of the appropriate divisional dean.
4. When two or more instructional departments are involved, the departmental chairperson of the department in which the student is enrolled will be

responsible for consulting with the additional departmental chairpersons. When two or more departments are involved, the written reply to the Enrollment Services/Registrar's Office will include the signatures of each respective departmental chairperson and the respective dean.

5. Credits from non-accredited institutions are evaluated by the departmental chairperson of the area in which the student enrolled. If the student changes his or her curriculum, he or she should notify the Enrollment Services/Registrar's Office because there may be a difference in the evaluation.

CREDITS EARNED IN FOREIGN INSTITUTIONS

Students with foreign education credentials (other than credits at Lansing Community College sister institutions) should contact one of the following National Association of Credential Evaluation Services, Inc. (NACES) member credential evaluation services and request a **course-specific evaluation**. (A course-specific evaluation converts grades, educational experiences, and levels of study into U.S. equivalents.)

- Educational Credential Evaluators, Inc., P.O. Box 92970, Milwaukee, WI 53202-0970; e-mail: eval@ece.org
- World Education Services, Inc., P.O. Box 745 Old Chelsea Station, New York, NY 10113-0745; e-mail: info@wes.org
- International Education Research Foundation, Inc. (medically-related credentials), P.O. Box 66940, Los Angeles, CA 90066; e-mail: info@ierf.org

When LCC receives a NACES evaluation report, the Enrollment Services/Registrar's Office will compare it to the course requirements for the program indicated on the application. If LCC grants credit based on this report, it will become part of the student transcript at LCC.

CREDIT FOR PREVIOUSLY ACQUIRED KNOWLEDGE AND LEARNING EXPERIENCE

Lansing Community College recognizes that learning outside of the classroom is valid. Therefore, the College assesses extra-institutional learning as part of its credentialing function. Any student who is currently enrolled at Lansing Community College may apply for experiential learning credit by obtaining an Experiential Learning Processing Form from the Enrollment Services/Registrar's Office, Gannon Vocational-Technical Building, (517) 483-1200.

NOTE: Lansing Community College's decision to award credit for experiential learning does not obligate any other institution to accept such credits in transfer. Receiving institutions reserve the right to assess transcripts of incoming students and award credit as they see fit. Credits received by students that are based on experiential learning may not be used for financial aid or veteran's benefits eligibility. Some Lansing Community College courses are excluded from experiential learning consideration.

Lansing Community College does not accept the transfer of credit for experiential learning awarded at other institutions.

Application Procedures

Relevant aspects of personal and professional experience gained through actual job-related activities and special training experiences may be applied to an academic program at Lansing Community College. Learning experiences must directly relate to a specific course or courses required within a Lansing Community College program (curriculum) or the LCC General Associate Degree. These experiences must have been obtained from a nonacademic source or not otherwise be available for academic credit through the transfer process outlined earlier. The student will be asked to declare his or her program of study on the Experiential Learning Application.

Prior to payment of the processing fee and submitting a portfolio of supporting documents, the student is advised to review with the academic department in which credit is being sought the probability of credit being granted. Students must then submit the completed Experiential Learning Processing Form to the Enrollment Services/Registrar's Office including as much supporting documentation as possible. The student must also attest by his or her signature that the information submitted is true to the best of his or her knowledge. The processing fee must accompany submission of the form and portfolio. The processing fee is not refundable.

Upon completion of the portfolio assessment, a fee of the resident tuition rate per credit hour will be charged for those credits which are determined awardable and which apply to the student's program (curriculum). Fees are subject to change by the Board of Trustees without prior notice.

Documentation

All experiential learning must be documented by the student. The purpose of the documentation is to substantiate that a student's knowledge and/or experience equates to specific Lansing Community College courses. The documentation must therefore be arranged within the application portfolio on a course-by-course basis and should demonstrate knowledge and/or skill equivalent to at least 80 percent of the course objectives. Documentation may be defined as, but not limited to, complete job descriptions, copies of course materials and outlines, certificates, training reports, signed supervisory verifications and evaluations on letterhead, and any other descriptive information that may provide a clear understanding of a student's background and competencies. Lansing Community College requires certification that the work or training experience is the student's own. The portfolio containing the Experiential Learning Processing Form and all supporting documents will be retained by the College.

Assessment of Portfolio

The completed Experiential Learning Processing Form and portfolio of supporting documents will be forwarded by the Enrollment Services/Registrar's Office to the appropriate divisional instructional leader. The instructional leader will assign the portfolio to an appropriate and impartial assessor for review and credit assessment. Assessors have the responsibility for evaluation and assignment of academic credit for experiential learning.

In the evaluation process, the assessor will verify the relevance of the information stated on the Experiential Learning Processing Form and the accompanying documentation as it equates to the courses requested. The authorization of credit must be stated in terms of equivalent courses that are offered by LCC.

Applicability of Credit

In determining whether it is appropriate to accept a student's experiential learning for credit, the major considerations should be the student's educational objective and extra-institutional learning achievement. The assessor will determine from documentation submitted the courses for which the student can be granted experiential learning credit. The student is responsible for determining how these courses may fit within their academic program (curriculum). Credit for experiential learning will be recorded on a student's official transcript on the basis of course-by-course equivalency and shall be prominently identified as credit for experiential learning. A maximum of 40 semester hours of experiential learning credit may be applied towards an LCC associate degree. (Twenty credits must be earned in attendance at Lansing Community College.)

Student Appeal Procedures

Students who believe the evaluation of their experiential learning is incorrect may file a written appeal to the dean of the division in which the experiential learning credit is being sought. Appeals must be received within six months from the date the credit application was assessed. In such instances, the dean will conduct a procedural review to ensure that the student has been treated in a fair and nondiscriminatory manner. The decision of the dean shall be final.

CREDIT BY EXAMINATION

Comprehensive Exams

A student may obtain credit for certain courses at the discretion of an instructor and department head by passing comprehensive examinations only during the semester in which the student is enrolled. The procedure a student uses to obtain comprehensive examination credit is as follows:

1. The student picks up an application for credit by examination at the Enrollment Services/Registrar's Office.
2. The student completes the required information on the application and takes the application to the department for instructor and departmental chairperson signatures of approval.
3. After obtaining the required signatures, the student returns the signed application to the Cashier's Office for payment of tuition.
4. The student will complete an examination for each course in which he or she hopes to receive credit.
5. An examination will not be given by the instructor until the student presents the appropriate payment receipt. No more than one examination will be given for a single payment.

6. The examination, after being evaluated by the instructor, will be maintained on file in the departmental office.
7. The Enrollment Services/Registrar's Office will contact the department and request the grade which was earned upon completion of the examination. A grade will be recorded for each comprehensive examination given.
8. The student will receive an official notice of the grade earned at the end of the semester in which the examination was taken or when processing has been completed.

Other Examinations

Lansing Community College accepts credit based on results from the following examinations: College Level Examination Program (CLEP) and the Advanced Placement Examination (AP). Students in need of information about these examinations should contact the Enrollment Services/Registrar's Office.

GRADUATION REQUIREMENTS, CERTIFICATES, AND DEGREES

INSTITUTIONAL REQUIREMENTS FOR CERTIFICATES OF ACHIEVEMENT AND CERTIFICATES OF COMPLETION

Certificates of achievement and certificates of completion are groups of designated courses in occupational areas. To receive a certificate of achievement or certificate of completion from Lansing Community College, a student must meet the following institutional graduation requirements:

1. Complete a course of study approved by the College and consisting of a minimum of 30 semester credits for a certificate of achievement and fewer than 30 semester credits for a certificate of completion with no more than 10 percent of these credits acquired on the pass/fail (P-Z) grading system. (See the *Degree and Certificate Programs* section of this catalog.)
2. Maintain a cumulative grade point average of 2.0 or above.
3. Earn toward graduation at least one-third of the semester credits for the certificate in attendance at Lansing Community College.
4. File an application for graduation with the Enrollment Services/Registrar's Office at least one semester preceding the semester of graduation.
5. Satisfy all general and specific requirements of Lansing Community College.

NOTE: Students seeking a certificate of achievement or certificate of completion may not follow curricular guides which predate their first semester of enrollment.

INSTITUTIONAL REQUIREMENTS FOR ASSOCIATE DEGREES

To receive an associate degree from Lansing Community College, a student must meet the following institutional graduation requirements:

1. Complete a course of study approved by the College and consisting of a minimum of 60 semester credits with no more than 10 percent of these credits acquired on the pass/fail (P-Z) grading system. (See the *Degree and Certificate Programs* section of this catalog.)
2. Maintain a cumulative grade point average of 2.0 or above.
3. Earn toward graduation at least 20 semester credits in attendance at Lansing Community College.
4. Satisfy the College's General Education Core Area Requirements, including demonstrated competency in mathematics.
5. Satisfy all general and specific requirements of Lansing Community College.
6. File an application for graduation with the Enrollment Services/Registrar's Office at least one semester preceding the semester of graduation.

NOTE: Students seeking an associate degree may not follow curricular guides which predate their first semester of enrollment.

Those students who maintain a 3.75 or higher grade point average will be graduated *Summa Cum Laude* (with highest honors); those who maintain a 3.50-3.74 grade point average will be graduated *Magna Cum Laude* (with high honors); those with a 3.25-3.49 will be graduated *Cum Laude* (with honors). Students must complete 40 semester credit hours of work at Lansing Community College to qualify for honors.

General requirements for associate degrees offered by Lansing Community College are presented below. (For specific degree requirements, see the *Degree and Certificate Programs* section of this catalog.)

Associate in Arts: This is primarily a transfer degree. It is designed for students who intend to transfer to a four-year institution to pursue a baccalaureate degree in such fields as liberal arts, education, humanities, or the social sciences. Requirements: 60-63 credits, including a minimum of 12 LCC General Education Core credits, demonstrated mathematics competency, additional general education requirements, subject matter concentrations (humanities, for example), and institutional associate degree requirements.

Associate in Science: This is primarily a transfer degree. It is designed for students who intend to transfer to a four-year institution to pursue a baccalaureate degree in such fields as mathematics, engineering, or the sciences. Requirements: 60-63 credits, including a minimum of 12 LCC General Education Core credits, demonstrated mathematics competency, additional general education requirements, subject matter concentrations (mathematics, for example), and institutional associate degree requirements.

Associate in Applied Arts: This degree is designed for students who seek education and the acquisition of skills needed to enter the job market or to advance their current careers. This degree includes a concentration of courses in fields such as the visual arts or the performing arts. Requirements: 60-72 credits, including a minimum of 12 LCC General Education Core credits, demonstrated mathematics competency, specific career program requirements, and institutional associate degree requirements.

Associate in Applied Science: This degree is designed for students who seek education and the acquisition of skills needed to enter the job market or to advance in their current careers. This degree includes a concentration of courses in fields such as health care, manufacturing, and construction. Requirements: 60-72 credits, including a minimum of 12 LCC General Education Core credits, demonstrated mathematics competency, specific career program requirements, and institutional associate degree requirements.

Associate in Business: This degree is designed for students who seek business education and the acquisition of business-related skills needed to enter the job market or to advance in their current careers. This degree includes a concentration of courses in areas such as marketing, management, and office administration. Requirements: 60-72 credits, including a minimum of 12 LCC General Education Core credits, demonstrated mathematics competency, specific career program requirements in business-related areas (marketing, for example), and institutional associate degree requirements.

General Associate Degree: This degree is a customized program of study which should be approved by an advisor. It includes one or more areas of concentration of the student's own choosing. Requirements: 60 credits, including a minimum of 12 LCC General Education Core credits, demonstrated mathematics competency, and institutional associate degree requirements.

LCC GENERAL EDUCATION REQUIREMENTS

In order to meet the needs of life-long learners in a constantly changing world, Lansing Community College believes that a common core of skills, knowledge, understanding, and reasoning is indispensable for all students granted an associate degree. This background is essential to every person as a productive worker and citizen and is a foundation upon which an individual can build a life-long pursuit of knowledge and education. In keeping with these beliefs, the College has established General Education Core requirements in the areas of mathematics, global perspectives and diversity, science and technology, speech communication, and writing for students seeking an LCC associate degree. The student outcomes expected for each of the Core areas are presented below.

1. Mathematics

- Use the strategies of arithmetic, geometry, and algebra to solve problems which include the concepts of length, area, volume, angle, percent, ratio, and proportion.
- Use and interpret expressions involving symbols in one and two variables which include parentheses, exponents, and radicals.
- Use, interpret, and produce graphs in one or two variables.

2. Global Perspectives and Diversity

- Describe and analyze the ways in which different world societies/civilizations establish social, political, and economic order and the effect of these on individuals and societies/civilizations.
- Describe and analyze the ways in which different world societies/civilizations view themselves.
- Describe and analyze how different world societies/civilizations have searched for truth, justice, and an understanding of what it means to be human.

- Describe and analyze how the major concepts within world societies/civilizations have resulted in peaceful and/or violent solutions to conflicts.
- Describe and analyze how major ideas, issues, values, and institutions in world societies/civilizations have shaped cultures and the effect these have on individuals.
- Describe and analyze how the United States includes and/or excludes diverse perspectives of different gender and ethnic groups.
- Describe and analyze how the arts reflect the major social, political, and individual concerns of world societies/civilizations.

3. Science and Technology

- Exhibit basic knowledge of the nature, scope, purposes, and limitations of science and technology as well as the connections between them.
- Demonstrate ability to gather, analyze, interpret, and draw conclusions from scientific and/or technical information.
- Understand and apply methods of science and technology by demonstrating appropriate experimental, problem-solving, and decision-making skills in a scientific and/or technological context.
- Understand the historical role, contemporary importance, and social and ethical implications of science and technology.
- Evaluate the impact of scientific and/or technological change on, for example, occupations; world, national and regional economies; business, industry, and social institutions.

4. Speech Communication

- Define and explain the nature and components of the communication process.
- Use language and nonverbal behavior to express ideas and feelings clearly and responsibly in interpersonal encounters.
- Participate constructively in group discussions as a leader or member.
- Research, prepare, and deliver public speeches effectively.
- Listen, with both literal and critical comprehension, to spoken messages in a variety of communication situations.

5. Writing

- Understand, analyze, and synthesize abstract concepts and concrete principles and information.
- Properly locate, incorporate, and attribute sources of information.
- Conform to conventions of grammar, punctuation, spelling, and diction, as appropriate to the purpose of the writing.
- Produce effective writings, including summaries, reports, and analyses.

HOW STUDENTS CAN SATISFY LCC GENERAL EDUCATION CORE REQUIREMENTS

All students must fulfill LCC General Education Core requirements in order to be awarded an associate degree. The ways in which students can satisfy these requirements are presented below. Because these may be revised each academic year, students should consult an academic advisor or the most recent edition of the *College Catalog* to stay informed of current options for satisfying Core requirements. Students should also be aware that not all courses that satisfy the LCC Core transfer to all institutions. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

How to Satisfy the General Education Core Requirements for Mathematics

To satisfy the General Education Core requirements for mathematics, a student must demonstrate mathematics competency. This can be done the ways listed below. **Students should be aware that placement test scores, evidence of an earned associate degree, waiver of a specific Core course, and combinations and/or portions of courses do NOT satisfy or waive the LCC Core requirement for mathematics.**

1. Passing the MATH 112 Proficiency Examination with the equivalent of a 2.0 grade or higher. (This exam is administered free of charge in the Assessment Center, Suite 2100, Gannon Vocational-Technical Building. It may be taken up to two times for purposes of satisfying the Mathematics Core.)
2. Achieving a grade of 2.0 or better in one of the following approved Mathematics Core courses:

MATH 112	Intermediate Algebra	(4)
MATH 115	Technical Math II	(4)
MATH 117	Math for Business	(4)

(Students must meet prerequisites prior to enrolling in these courses. See the *Course Descriptions* section of this catalog.)

3. Achieving a grade of 2.0 or better in any of the following non-Core mathematics courses:

MATH 121	College Algebra I	(4)
MATH 122	College Algebra II and Trigonometry	(3)
MATH 126	College Algebra and Trigonometry	(5)
MATH 130	Finite Mathematics	(3)
MATH 141	Calculus with Applications	(3)
MATH 141	Calculus I	(4)
MATH 152	Calculus II	(4)
MATH 201	Math for Elementary Teachers	(3)
MATH 253	Calculus III	(4)
MATH 254	Introduction to Differential Equations	(3)
MATH 260	Linear Algebra	(3)

(NOTE: Achieving a grade of 2.0 or higher in one of these courses implicitly demonstrates competency. Descriptions of these courses can be found in the *Course Descriptions* section of this catalog.)

4. Establishing credit for an approved Mathematics Core course listed in #2 above or a non-Core mathematics course listed in #3 above through the Experiential Learning Process. (See section entitled *Credit for Previously Acquired Knowledge and Learning Experience* in this catalog.)
5. Transferring comparable course credit—general credit does not apply—for an approved Mathematics Core course listed in #2 above or a non-Core mathematics course listed in #3 above from an accredited institution. (See section entitled *Acceptance and Evaluation of Transfer Credits from Other Institutions of Higher Education* in this catalog.)
6. Establishing course credit for an approved Mathematics Core course listed in #2 above or a non-Core mathematics course listed in #3 above through the Advanced Placement Examination (AP), the College Level Examination Program (CLEP), or others as recognized by Lansing Community College.
7. Presenting evidence of an earned baccalaureate degree from an accredited college or university. This would fulfill all General Education Core requirements.

How to Satisfy the General Education Core Requirements for Global Perspectives and Diversity, Science and Technology, Speech Communication, and Writing

Students can satisfy the General Education Core requirements for the areas of global perspectives and diversity, science and technology, speech communication, and writing in any of the following ways (a minimum of three credits is required for each of the areas):

1. Achieving a grade of 2.0 or higher in an approved Core course (credits in parentheses):
 - a. **Global Perspectives and Diversity**

ENGL 211	World Literature I	(4)
ENGL 212	World Literature II	(4)
HUMS 211	History of Art I	(4)
HUMS 212	History of Art II	(4)
HUMS 213	World Civilizations I	(4)
HUMS 214	World Civilizations II	(4)
MGMT 234	Diversity in the Workplace	(3)
OADM 275	Cultural Differences in Business	(3)
PHIL 211	World Philosophies I	(4)
PHIL 212	World Philosophies II	(4)
POLS 260	Comparative Political Systems	(3)
SOCL 120	Introduction to Sociology	(4)
 - b. **Science and Technology**

ASTR 201	Introductory Astronomy	(4)
BIOL 202	Human Physiology	(4)
CHEM 135	Chemistry in Society	(4)
CHEM 151/161	General Chemistry Lecture I and Laboratory I	(4/1)
CISB 200	Information Systems Technology and Problem Solving	(3)
ISCI 121	Integrated Science for Education I	(4)

ISCI 131	Integrated Science – Physical	(4)
METR 220	Introduction to Meteorology	(4)
PHYS 215/225	Physics I: Mechanics and Laboratory	(5/1)

c. Speech Communication

SPCH 110	Oral Communication in the Workplace	(3)
SPCH 120	Dynamics of Communication	(3)

d. Writing

ENGL 122	Writing about Literature and Ideas	(4)
ENGL 132	Honors Writing about Literature and Ideas	(4)
WRIT 121	Composition I	(4)
WRIT 122	Composition II	(4)
WRIT 124	Technical Writing	(3)
WRIT 127	Business Writing	(3)
WRIT 131	Honors Composition I	(4)
WRIT 132	Honors Composition II	(4)

Descriptions for each of the above courses can be found in the *Course Descriptions* section of this catalog.

2. Passing a Comprehensive Examination for an approved Core area course listed in #1 above in cases where such exams are available. Upon successfully completing the exam, a student would receive LCC credit for the course. The student is also required to pay tuition for the course prior to taking the exam. (See the section entitled *Credit by Examination* in this catalog.)
3. Establishing credit for an approved Core course listed in #1 above through the Experiential Learning Process. (See section entitled *Credit for Previously Acquired Knowledge and Learning Experience* in this catalog.)
4. Transferring comparable course credit—general credit does not apply—for an approved Core course listed in #1 above from an accredited institution. (See section entitled *Acceptance and Evaluation of Transfer Credits from Other Institutions of Higher Education* in this catalog.)
5. Establishing Core course credit for courses listed in #1 above through the Advanced Placement Examination (AP), the College Level Examination Program (CLEP), or others as recognized by Lansing Community College.
6. For global perspectives and diversity, writing, and science and technology, presenting evidence of satisfying MACRAO requirements at an accredited college or university other than LCC, provided the student has earned a 2.0 or higher for each course. (NOTE: This does not satisfy the speech communication requirement.)
7. Presenting evidence of an earned baccalaureate degree from an accredited college or university. This would fulfill all General Education Core requirements.

If a student has successfully completed an approved General Education Core course in any LCC curriculum, the student will have met that Core area requirement even if he or she changes to another curriculum. However, in the newly chosen curriculum, the student may need to take a *required* course that satisfies a Core area requirement that he or she has already fulfilled.

The following do NOT satisfy or waive LCC General Education requirements: evidence of an earned associate degree or certificate, placement test scores, a waiver of a specific Core course, completion of higher-level courses that are not approved Core courses (with the exception of mathematics), combinations and/or portions of courses.

HOW TO APPLY FOR THE ASSOCIATE DEGREE, CERTIFICATE OF ACHIEVEMENT, OR CERTIFICATE OF COMPLETION

Prior to submitting an application for a degree or certificate, students should consult with an advisor to review progress toward completing requirements. Substitutions or waivers for program requirements must be approved on an authorized form signed by the department offering the program. (Substitutions and waivers are not allowed for institutional degree or certificate requirements. See *Institutional Requirements for Certificates of Achievement and Certificates of Completion* and *Institutional Requirements for Associate Degrees* in this section.) The process of applying for a degree or certificate takes approximately one semester, so students should apply one semester in advance of the semester they plan to graduate.

Procedures are as follows:

1. Complete an Application for Diploma/Certificate. This application is available in the Enrollment Services/Registrar's Office.
2. Attach a copy of the curricular guide (program of study) for the degree or certificate being sought. NOTE: Students may not follow a curricular guide that predates their first semester of enrollment. The requirements must be met by the semester the curricular guide expires.
3. Return the application and the curricular guide to the Enrollment Services/Registrar's Office. If a department has authorized program substitutions or waivers, the completed and signed form(s) must accompany the application.
4. If the Enrollment Services/Registrar's Office determines that there are requirements NOT met, the student will receive a report specifying the unmet requirements which must be completed.
5. If all the requirements are met, the student will receive a letter indicating that the degree or certificate will be awarded.
6. The LCC transcript will show the degree or certificate awarded.
7. Diplomas are mailed to students during the semester after degrees or certificates have been awarded.

SEMESTER TRANSITION PROGRAM COMPLETION INFORMATION

In the fall of 1993, Lansing Community College changed from a quarter to a semester system. Students who first enrolled at the College for Fall Semester 1993 and thereafter are considered semester students.

Students who started degree or certificate programs at LCC prior to Fall Semester 1993 and are continuing their studies on the semester system are considered transition students. In order to complete college requirements or curriculum requirements for their declared major, transition students should meet with an academic advisor to complete a Curriculum Completion Plan.

PLEASE NOTE: All Curriculum Completion Plans must be approved by departmental chairpersons. All students must follow a semester curricular guide.

Most Lansing Community College curricular guides are valid for a period of five years. The inclusive dates are printed on each guide. All quarter-based curricular guides expired at the end of Summer Session 1997.

TRANSFER

Students planning to transfer to another institution should be aware that universities and colleges differ widely in the courses they accept for transfer. A student intending to transfer should follow the transfer curriculum guide of the institution to which he or she intends to enroll. Transfer guides are not LCC degree guides. In order to achieve maximum transferability of courses, students should consult with an academic advisor. (See the *Degree and Certificate Programs* section of this catalog for more information about transfer programs.)

REGULATION FOR THE GRANTING OF ADDITIONAL ASSOCIATE DEGREES

Any student who has received an associate degree from Lansing Community College or any other accredited community college may be awarded a second associate degree subject to the following stipulations:

1. For each additional associate degree, a minimum of 10 semester credit hours must be completed at LCC in the division in which the degree is sought, non-repetitive of previously earned credits. (NOTE: The institutional associate degree requirement of 20 credits earned at LCC must be met by those students not receiving their first degree at LCC.)
2. All requirements for an associate degree in either arts, applied arts, business, science, or applied science must be met.
3. The College's General Education Core requirements, including demonstrated competency in mathematics, must be satisfied.
4. No additional degree will be granted in the same program or curriculum in which the first degree was earned.
5. An additional degree must be within a specific program or curriculum.
6. Exceptions to the above should be appealed to the office of the respective dean.

REGULATION FOR GRANTING AN ASSOCIATE DEGREE WHEN THE STUDENT HAS AN EARNED BACHELOR'S DEGREE

A student who has earned a bachelor's degree from an accredited American college or university which has a general education requirement may be awarded an associate degree at Lansing Community College subject to the following requirements:

1. For each associate degree, a minimum of 10 semester credit hours must be completed at Lansing Community College in the division in which the associate degree is sought. The Lansing Community College cumulative grade point average must be at or above a 2.0 level.
2. All requirements for an associate degree in either arts, applied arts, business, science, or applied science must be met.
3. The College's General Education Core requirements are waived.
4. The associate degree must be within a specific program or curriculum.
5. Exceptions to the above should be appealed to the office of the dean of the division in which the associate degree is sought.

ASSURANCE OF QUALITY

Lansing Community College offers assurance—a guarantee—to its students; prospective employers; and receiving transfer colleges, universities, and technical training institutions, that individuals who have earned LCC degrees or certificates are competent to perform in their areas of major study.

Transferring students who have earned an official Lansing Community College certificate or degree should be able to perform competently in the area in which they majored or specialized at Lansing Community College.

Non-transferring students who have earned an official Lansing Community College certificate or degree should be able to perform competently in the area in which they majored or specialized at Lansing Community College.

A Lansing Community College graduate may be permitted to retake a specified course or courses, when next offered, with no tuition or fee charge by submitting his or her request to the Office of the Registrar along with supporting documentation from the institution to which he or she has transferred or from his or her employer, whichever is appropriate.

Because unused skills and knowledge can decay rapidly, the assurances offered herein will be in effect for one year from the date the course or courses in question were taken at Lansing Community College.

STUDENT RIGHTS, RESPONSIBILITIES, AND CONDUCT

The College adheres to the principle that the campus climate provide for students maximum freedom and necessary order. In order to ensure this principle, the College has established procedures for the redress of grievances by the individuals accused in such proceedings. In addition, general rules and regulations have been established by the College to ensure the protection of student rights and the efficient operation of College programs. In cases of noncompliance with these regulations, the College will impose discipline which is consistent with the impact of the offense on the College community. The College also reserves the right to pursue criminal and/or civil action where warranted.

GENERAL RULES AND REGULATIONS

Assaults

Assault and/or battery, and threatening, attempting, or using physical force or intimidation against (a) any person on the College premises or at a College-sponsored function (athletic events, activities, etc.), or (b) any College student or employee in connection with the performance of his or her College duties, are prohibited. For the purpose of this regulation, assault is defined as an attempt or offer, with force and violence, to do corporal hurt to another, with apparent present means of carrying out the attempt. Battery is an injury which results from an assault. Battery is an injury, regardless of intent, actually done to a person by another in an angry, revengeful, rude, or insolent manner.

Assembly

No person or persons shall assemble in a manner which obstructs the free movement of persons about the campus or the free and normal use of College buildings and facilities or prevents or obstructs the normal operations of the College.

Attendance

Students are expected to attend all sessions of each course in which they are enrolled. Failure to do so will result in academic penalty or withdrawal from the class. Absence for any reason, including illness or late registration, in no way relieves the student of the responsibility for completing all work in the course to the satisfaction of the instructor in charge. When a student receives a faculty-initiated notice of nonattendance, it is the student's responsibility to contact the instructor.

When a student cannot attend class due to illness or other extenuating reasons, the class instructor should be notified. This can be done by telephoning the departmental office in which the instructor is a member and leaving a message for that instructor.

Cheating

Each student is expected to be honest in his or her work. Cheating is dishonest. The term "cheating" includes but is not limited to: (1) use of any unauthorized assistance in taking quizzes, tests, or examinations; (2) dependence upon the aid of sources beyond those authorized by the instructor in writing papers, preparing reports, solving problems, or carrying out other assignments; or (3) the acquisition, without permission, of tests or other academic material belonging to a member of the College faculty or staff. Any interaction between students in a testing situation may be interpreted as cheating. Academic honesty is twofold on the part of the student: first, not to cheat, and second, not to enable others to cheat.

Computer Resources -- Acceptable Use

The *LCC Acceptable Use Policy* describes the policies and guidelines for the use of the College's computer resources. Use of College-owned computer resources is a privilege extended by the College to students, employees, and other authorized users as a tool to promote the mission of the College. All users agree to be bound by the terms and conditions of the *LCC Acceptable Use Policy* at the time they complete an account application form. Copies of the *LCC Acceptable Use Policy* are available at the Library Circulation Desk and may also be accessed on the World Wide Web. The URL is <http://www.lansing.cc.mi.us/lccinfo/aup.html>.

Conduct-- Interim Due Process Suspension

If a student's misconduct gives cause for belief that the physical or emotional safety of any member of the College community is threatened or that any personal or public property is jeopardized, the student's right to be on campus can be immediately suspended. A suspension of this type is called an Interim Due Process Suspension. Interim Due Process Suspensions will take effect immediately upon direction of the Director of Student Relations or the Dean of the division where the misconduct occurred and will last for no more than 10 days. A procedural due process hearing with proper notifications will be established during this 10-day period. (See section entitled *Due Process*.)

Disclosure of Health Concerns

Lansing Community College takes appropriate and reasonable precautions to protect the health and safety of students in the classroom. However, some courses may require students to work with chemicals and/or equipment which may be hazardous to some students, such as those with certain medical conditions. Students should inform instructors of any special health-related conditions which may be negatively affected by instructional materials or equipment used in the classroom. Students with special health concerns are strongly encouraged to raise any questions about such matters prior to their enrolling in a class.

Dress

Students are expected to dress in an appropriate fashion, having in mind the activity in which they are engaged, while on College property and when attending College-sponsored events. Specific attire, not limited to but including appropriate footwear, safety glasses, safety hats, shields and aprons, may be required when the health and safety of the individual student or other members of the College community are to be protected.

Drug and Alcohol Regulations

In recognition of (1) the serious health risks associated with the illegal use of controlled substances and (2) the abuse of alcohol, and in conformance with the Board of Trustees policies 4416 and 7820, as well as the Drug-Free Schools and

Communities Act Amendments of 1989 (20 U.S.C. 3171, et seq.), the following regulations are effective immediately:

1. Students, employees, and guests may not manufacture, distribute, dispense, possess, or use alcoholic beverages on College premises.
2. Students, employees, and guests may not unlawfully possess, use, or distribute controlled substances and alcohol on College premises or when engaged in College activities such as conferences or field trips.
3. No College funds will be used for the purpose of purchasing alcoholic beverages or controlled substances.
4. Being under the influence of alcohol or any controlled substance while on College premises or engaged in College activities is prohibited.
5. Students, employees, and guests are personally accountable for knowledge of federal, state, and local laws relating to alcoholic beverages and controlled substances, the minimum drinking age, transporting open containers of alcoholic beverages, and false representation of age by a minor.
6. As a condition of his or her employment, each employee of the College shall agree to abide by the terms contained within this policy. Violation of any of these terms by College employees may result in disciplinary action, up to and including termination. The College may require satisfactory participation in a substance or alcohol abuse assistance or rehabilitation program for an employee who violates any of the prohibitions listed above.
7. As a further condition of his or her employment, each employee of the College shall agree to notify the College of any criminal drug statute conviction for a violation occurring on College premises or while engaged in College activities, no later than five (5) days after such a conviction. Upon receiving notice of such conviction, the College shall take appropriate disciplinary action within thirty (30) days thereafter.
8. Violation of this regulation by students may result in disciplinary action up to and including expulsion from the College and referral for prosecution. A lack of legal conviction or relevant laws is not a defense in a charged violation of this regulation.
9. Guests on College premises are expected to follow the above requirements. Failure to do so may result in a request to leave College property or College activities.
10. In the spirit of providing a safe, healthy and drug-free environment, the College will:
 - a. Continue to offer educational programs that support a drug-free campus and workplace as a normative social value;
 - b. Continue to offer opportunities for substance abuse counseling accessible by students and College employees;
 - c. Continue to make referrals to appropriate counseling professionals and/or agencies within the community to help students and employees who may benefit from such counseling;
 - d. Incorporate in classes throughout the curriculum, where appropriate, references and class-related assignments related to the medical, legal, social, and wellness issues inherent in a drug-free campus and workplace;
 - e. Distribute copies of this regulation to all new students and employees.
11. Substance abuse is a serious but treatable condition or disease that can lead to short-term or long-term physical and psychological consequences, including but not limited to dependence, damage to the nervous system, heart and respiratory conditions, and death.
12. A "controlled substance" is defined as one: 1) which is not legally obtainable; 2) which is being used in a manner different from that prescribed; or 3) which is legally obtainable but has not legally been obtained. (21 U.S.C.821:MCLA, 333.7101, et. seq.)
13. A "conviction" under this policy is defined as a defendant pleading guilty or no contest and/or a guilty finding by a court of law.

Examinations

Students are required to take examinations at the appointed time and place in order to receive credit for a course. Generally, examinations are given during the regularly scheduled class period during the last week of the semester.

Field Trips

Students participating in all College-sponsored activities, including field trips and athletic events, must abide by all College rules. Student organization field trips must be planned, organized, and approved according to the Student Life Policies and Procedures for Student Organizations, and, where applicable, the parking and transportation services unit of the Public Safety Department. Organizations which

function outside of these policies and procedures may be put on probation and suspended if appropriate.

Fighting

Fighting on College property is prohibited except for contests or exhibitions held or sponsored by the College or a recognized College organization.

Financial Responsibility

Students owing money to the College in respect to such matters as fees, loans, library fines, driving or parking penalties, etc., will be subject to disciplinary action if such accounts are not paid when due. In particular, it should be noted that if any accounts are outstanding at the end of an academic semester, the publication of the student's grade report and/or official transcripts will be delayed, and the student will not be permitted to register for a succeeding semester until such accounts are paid.

Games and Recreational Activities

Games of any kind may only be played in the recreational or athletic facilities which have been designated for such games. Applications for permission to play any game other than in an area designated for that purpose must be obtained from the Director of Student Life.

Guest Speakers

College regulations with respect to the participation of guest speakers are outlined in the Policy for Guest Speakers. The College requires orderly conduct, non-interference with College functions or activities, and identification of the sponsoring groups or individuals. Under no circumstances are members of the College community to be forced to be involuntary audiences.

Identification Cards

All Lansing Community College students are issued an identification card. Students are expected to show their current I.D. card whenever they check out books at the College libraries, use the Abel B. Sykes TLC Computer Lab, etc., or when they are requested by a member of the faculty or staff of the College. Misuse of College identification to obtain privileges to which the student or to which others are not entitled under existing regulations is a College offense that may result in suspension or dismissal.

Laws

Students shall obey the laws enacted by federal, state, and local governments. It is appropriate that the students be aware of Act 26 of the Public Acts of 1970:

Sec. 1. A person is guilty of a misdemeanor, punishable by a fine of not more than \$500.00, or by incarceration in the county jail for not more than 30 days, or both:

1. When the chief administrative officer of a publicly owned and operated institution of higher education, or his or her designee, notifies the person that he or she is such an officer or designee and that the person is in violation of the properly promulgated rules of the institution; and
2. When the person is in fact in violation of such rules; and
3. When, thereafter, such officer or designee directs the person to vacate the premises, building, or other structure of the institution; and
4. When the person thereafter willfully remains in or on such premises, building, or other structure; and
5. When, in so remaining therein or thereon, the person constitutes:
 - a. A clear and substantial risk of physical harm or injury to other persons or of damage to or destruction of the property of the institution, or
 - b. An unreasonable prevention or disruption of the customary and lawful functions of the institution, by occupying space necessary therefore or by use of force or by threat of force.

Sec. 2. A person is guilty of a misdemeanor, punishable by a fine of not less than \$200.00 and not more than \$1,000.00, or by incarceration in the county jail for not more than 90 days, or both, who enters on the premises, building, or other structure of a publicly owned and operated institution of higher education, with the intention to, and therein or thereon does in fact, constitute (a) a clear and substantial risk of physical harm or injury to other persons or of damage to or destruction of the property of the institution, or (b) an unreasonable prevention or

disruption of the customary and lawful function of the institution, by occupying space necessary therefore or by use of force or by threat of force.

Sec. 3. This act shall take effect August 1, 1970.

Obstructing and Jostling

Obstructing or threatening to obstruct College property without authorization/permission from a College official is prohibited. (To obstruct is to impede free and uninterrupted passage or free and uninterrupted use of College property). Jostling or roughly crowding other persons on College property is also prohibited.

Organizations

No student or student organization may use campus facilities, solicit funds, business, or support on the College campus unless such a student or student organization has been authorized by the Director of Student Life. Approval of College clubs and organizations must be in accordance with guidelines documented in the Student Life Office.

Pets

In order to protect the health and safety of the members of the College community and preserve order on the campus, no pets, including but not limited to, dogs, cats, birds, and rodents shall be permitted within the buildings of Lansing Community College. This is not intended to exclude Seeing Eye dogs used by the visually impaired or animals designated for laboratory experimentation purposes.

Plagiarism

Each student is expected to be honest in his or her work. Plagiarism is dishonest. Plagiarism includes, but is not limited to, the use, by paraphrase or direct quotation, of the published or unpublished work of another person without full and clear acknowledgment. It also includes the unacknowledged use of materials prepared by another person or agency engaged in the selling of term papers and/or other academic materials.

Records

It is the responsibility of the student to give honest and complete replies to all questions included in application forms and other documents required by the College. Alteration, duplication, or falsification of a College document, form, or authorized signature is considered by the College to be an extremely serious offense and is subject to disciplinary action.

Smoking

Smoking is not permitted in college facilities or near the main entrances/exits of all campus buildings. There are 18 designated smoking areas on the campus (see the campus map included in this catalog). All other areas are designated "Smoke Free."

Student Evaluation of Instructional Quality

Because students expect quality in their learning experiences, Lansing Community College provides opportunities for students to participate in the evaluation and improvement of instruction. These opportunities include the following:

1. Periodically completing Student Evaluation Forms at the conclusion of courses. The forms are distributed by a person other than the instructor, and the instructor is not present at the time the students complete the forms.
2. Serving on various councils, boards, and committees of the College in order to provide input and student perspective in the development and evaluation of both instructional and support-service programs. These councils, boards, and committees are located in the various divisions of the College. Those students who have interest in serving on or contacting members of these bodies may contact the Student Life Office or the office of the dean in the appropriate divisions.

Specific questions regarding student participation in the evaluation of instruction may be directed to the Office of the Dean of Student and Academic Support for clarification or appropriate referral.

Vandalism/Theft

Property of the College, as well as that of individuals, should be respected. Vandalism or theft of any kind, the destruction or mutilation of computer or media resources, materials, equipment, buildings, or grounds of the College, is inconsistent with the objectives of the College and good citizenship and will result in disciplinary action.

Video Cassette

The federal copyright law, Title 17 of the United States Code, provides copyright protection of "original works of authorship," including "motion pictures and other audiovisual works." Thus, the use of video cassettes and films is restricted to private showings, and public showings are prohibited without the copyright owner's consent. Under the "fair use" limitation, copyrighted cassettes, motion pictures, and other audiovisual works may be used for purposes such as "teaching (including multiple copies for classroom use), scholarship, or research" without violation, and audiovisual materials purchased or rented by the College have the written consent of the copyright owners and, therefore, are legally appropriate for classroom use.

Weapons and Explosives

Illegal or unauthorized possession of firearms, explosives, other weapons, or dangerous chemicals is not permitted on College property. The foregoing shall not prohibit fencing foils and other athletic equipment intended for such use, nor shall it apply to persons holding concealed weapons permits and duly constituted police officers who are authorized by law to carry weapons.

CRIMINAL AND/OR CIVIL ACTIONS

When the actions or conduct of a student warrant the involvement of the Public Safety Department, a complaint report is initiated. Should a student initiate the complaint and the Public Safety Department is involved, a complaint report is taken.

A crime committed on the College campus is investigated and referred to the Ingham County Prosecutor's Office. The decision to prosecute is made by the Prosecutor's Office. This action is separate from the Due Process procedure of the College.

DUE PROCESS

Lansing Community College holds firm to the philosophy that matriculation in college does not deny any rights of citizenship to a student. At the same time, matriculation in college does not relieve a student of the essential responsibilities of citizenship. Thus, the College is constantly aware of the joint responsibilities, shared by the student body and the College, to uphold the principles of "due process" in all disciplinary action.

It is the College's intention to foster and promote an environment of cooperation among faculty, staff, and students. However, conflicts that require third-party intervention sometimes exist. While there are formal processes for resolving conflicts, it is the goal of the College to achieve resolution as rapidly and as close to the origin of conflict as possible through mediation. To this end, the Director of Student Relations and the Director of Equal Opportunity are empowered to mediate situations at their lowest level or to direct the parties involved to the person(s) or department(s) that can best mediate the occurrence. This mediation is predicated on the voluntary agreement of both parties. Matters that are considered too extreme may require immediate referral to the formal process.

Due Process is the guarantee of student civil rights under the Constitution of the United States and the laws and regulations of Michigan and Lansing Community College. Due Process is that process which prevents rights from being taken away from an individual without a fair hearing. Any questions regarding Due Process should be directed to the office of Director of Student Relations at (517) 483-1163.

Student Appeals and Complaints

LCC students may initiate Due Process through established appeal and complaint procedures. In the appeal process, students may appeal disciplinary action or academic decisions. In the complaint process, students may lodge complaints regarding persons, policies, or procedures at the College. The Judicial Board will hear cases referred to it by administrative officers of the College or by individual students through the established appeal and complaint processes. The student

has the right to request a public or private hearing, but the decision rests with the College, after considering the wishes of the parties involved.

Student Appeals

A "line of appeal" is defined as the appropriate sequence of communication to be followed when appealing a decision or action. An "appeal" is defined as a request to review a previous decision and/or the process used in reaching the decision. Before initiating the formal appeal process at the divisional level, students are encouraged to first meet with the initial decision-maker involved (the instructor, for example) to attempt to resolve issues in an informal manner. The following describes a recommended sequence of communication for resolving issues in an informal manner:

1. The student may speak with the person who initiated the decision or action in question and request a reconsideration.
2. If the student is not satisfied with the resolution proposed by the person who initiated the decision or action, he or she may speak with the head of the department in which the decision or action in question was initiated and request assistance in resolving this issue.
3. If the student is not satisfied with the resolution proposed by the head of the department, he or she may speak with the dean (or his or her designee) of the division in which the decision or action in question was initiated and request assistance in resolving the issue.
4. If the student is not satisfied with the resolution proposed by the dean or the dean's designee, he or she may speak with the Director of Student Relations (or his or her designee) and request assistance in resolving the issue.

If the student believes he or she is being treated unfairly at any point in the informal process, the student may begin the formal appeal process of the College. The line of formal appeal to be followed will depend upon the type of case involved. In all cases, students are required to state their appeal in writing at the time they begin the formal appeal process. The following describes the different types of cases and the appropriate lines of appeal to be used in each case.

1. Student Appeal of Disciplinary Action for Violation of General Rules and Regulations

When a student is accused of violating general rules and regulations of the College, except those involving academic rules and regulations, the procedures described below will be followed:

The student will receive written notification that an alleged violation has occurred. In the letter, the student will be directed to make an appointment with the appropriate College official to review the facts concerning the alleged violation in order to determine if formal charges should be prepared. In the event that the student fails to contact the appropriate College official within 10 (ten) class days of receiving written notification (excluding Saturday and Sunday), a "hold" will be placed on the student's record which will result in the student's enrollment being delayed.

If a decision is made to prepare formal charges, the student shall be notified by an appropriate College official that he or she is being accused of violating a regulation and that he or she may elect to do one of the following:

- a. The student may admit the alleged violation and request, in writing, that the administrative officer take whatever action seems necessary;
- b. The student may admit the alleged violation and request a hearing before the Judicial Board regarding the discipline imposed;
- c. The student may deny the alleged violation, in which case the administrative officer shall refer him or her to the Judicial Board.

When formally appealing a disciplinary action based on a violation of general rules and regulations of the College (explosives, alcoholic beverages, or mistreatment of college property, for example), the student shall use the following line of appeal:

- a. The Director of Student Relations (or his or her designee);
- b. The Judicial Board of the College;
- c. The President (or his or her designee).

Examples of disciplinary action include the following:

- Reprimand
- Probation
- Restrictions on activities or privileges
- Requirements of restitution
- Denial or revocation of a College honor or degree
- Suspension
- Dismissal
- Permanent dismissal

NOTE: At each level of the appeal process, a student will have up to 10 (ten) calendar days (excluding Saturday and Sunday) to appeal a decision after notification of that decision at a prior level.

2. Student Academic Appeals (of Grades, of a Violation of Academic Rules and Regulations, or of Academic Disciplinary Action)

When formally appealing an academic decision or action—such as a grade, an academic charge based on a violation of the academic rules and regulations (cheating or plagiarism, for example), or an academic disciplinary action (loss of credit, for example)—the student shall use the following line of appeal:

- a. The dean of the division involved (or his or her designee)
- b. The Judicial Board of the College
- c. The President (or his or her designee)

NOTE: At each level of the appeal process, a student will have up to 10 (ten) calendar days (excluding Saturday and Sunday) to appeal a decision after notification of that decision at a prior level. When a student wishes to appeal a grade, he or she must do so by the end of the sixth week of the following semester or summer session.

3. Student Appeal of Administrative Withdrawal from Classes (for Nonattendance, Lack of Course Prerequisites, or Inappropriate Classroom Behavior)

Whenever the Office of the Registrar receives a recommendation for an administrative withdrawal, the Office of the Registrar will notify the student in writing that he or she is being administratively withdrawn. The lines of appeal for administrative withdrawal decisions are as follows:

- a. The dean of the division involved (or his or her designee)
- b. Judicial Board of the College
- c. President (or his or her designee)

NOTE: In cases of administrative withdrawal, a student will have up to 5 (five) calendar days (excluding Saturday and Sunday) to appeal a decision after notification of that decision at a prior level.

4. Student Appeal of Educational Records

Students have the right to request correction or amendment of information on educational records that are inaccurate, misleading, or which violate privacy rights or other rights as stated in the Family Education Rights and Privacy Act of 1974, as amended. The student shall use the following line of appeal:

- a. The director or leader of the department responsible for the record (or his or her designee)
- b. The dean of the division involved (or his or her designee)
- c. The Judicial Board of the College
- d. The President (or his or her designee)

If the request for correction or amendment of information is denied after the appeal process has been completed, the student may place a brief statement in the record commenting on the decision of the College.

NOTE: A student will have up to five (5) calendar days (excluding Saturday and Sunday) to appeal a decision after notification of that decision at a prior level.

Student Complaints

Before initiating the formal appeal process at the divisional level, students are encouraged to first meet with the initial decision-maker involved (the instructor, for example) to attempt to resolve issues in an informal manner. When a student wishes to lodge a formal complaint regarding a person—except in cases of sexual harassment/discrimination (which is found in this catalog under *Student and Staff Sexual Harassment and Discrimination*)—the student is encouraged to use the following line of appeal:

- a. The dean of the division involved (or his or her designee)
- b. The Judicial Board of the College
- c. The President (or his or her designee)

NOTE: At each level of the complaint process, a student will have up to 10 (ten) calendar days (excluding Saturday and Sunday) to appeal a decision after notification of that decision at a prior level.

Judicial Board

Due Process is the guarantee of student civil rights under the Constitution of the United States and the laws and regulations of Michigan and Lansing Community College. Due Process is that process which prevents rights from being

taken away from an individual without a fair hearing. The student has the right to request a public or private hearing, but the decision rests with the College, after considering the wishes of the parties involved.

The Judicial Board shall hear the case and render a decision.

1. Prior to a Judicial Board hearing, the student shall be entitled to the following:
 - a. Written notification of the time and place of the hearing;
 - b. A written statement of a decision rendered and/or charges so that the student may prepare his or her defense;
 - c. Written notification of the names of the witnesses directly responsible for having reported the alleged violation OR written notification of how the alleged violation came to the College's attention.
2. In hearings involving more than one student, the Chairperson of the Judicial Board, at his or her discretion, may permit the hearings concerning each student to be conducted separately.
3. The student shall be entitled to appear in person and present his or her defense to the Judicial Board and may call witnesses on his or her behalf. The student may waive the right to appear before the Judicial Board. Should he or she elect not to appear, the student shall be considered to have waived the right to appeal, and the decision at the prior level stands.
4. The student shall be entitled to be accompanied by a person of his or her choice. If this person is in the form of legal counsel, the student must notify the Office of the Director of Student Relations at least 10 (ten) days prior to the scheduled hearing date.
5. The student has the right to be assisted by any advisor he or she chooses, at his or her own expense. The advisor may be an attorney. The student is responsible for presenting his or her own case and, therefore, advisors are not permitted to speak or to participate directly in any hearing before a Judicial Board.
6. All procedural questions are subject to the final decision of the chairperson of the Judicial Board.
7. Admission of any person to the hearing shall be at the discretion of the Chair of the Judicial Board.
8. The student shall be entitled to an expeditious hearing of his or her case.
9. The student shall be entitled to receive the decision of the Judicial Board in writing.
10. The College shall make a record of the hearing. The record shall be the property of the College.
11. A student who wishes to contest the decision of the Judicial Board may request that the President of the College (or his or her designee) review the decision of the Judicial Board. The student must request this review within 10 (ten) scheduled class days (excluding Saturday and Sunday) of notification of the Judicial Board's decision. Decisions rendered by the President (or his or her designee) will be final.

The Judicial Board's determination shall be made on the basis of whether it is more likely than not that the earlier determination is appropriate. Decisions rendered by the Judicial Board will be made by a simple majority vote of the total membership of the Judicial Board. Decisions rendered by the Judicial Board will be final unless appealed to the President. In addition, the Judicial Board is empowered to make recommendations based on decisions rendered.

Membership of the Judicial Board

The Judicial Board will consist of the following members:

1. The Director of Student Relations or his or her designee. (NOTE: This member will serve as chairperson. However, when the Judicial Board is hearing an appeal based on a disciplinary decision of the Office of the Director of Student Relations, the Director of Student Relations will relinquish the chair, and a temporary chairperson will be elected by the remaining members of the Judicial Board.)
2. One College administrator appointed by the Director of Student Relations;
3. Two students from the student body, selected by the members of the Leadership Academy, with consent of the Director of Student Life. One alternate will be appointed in the same way to serve in the absence of any student member;
4. Two faculty members appointed by the dean of the division in which the decision or action in question was initiated, with one alternate faculty member appointed in the same way, to serve in absence of any faculty member.
5. In the event two or more divisions are involved, one faculty representative from each division and an equal number of student representatives will be in attendance.

Regulation Revisions and Additions

Lansing Community College reserves the right to change or add to the rules and regulations at any time.

DISCRIMINATION AND HARASSMENT COMPLAINT PROCESS

I. LANSING COMMUNITY COLLEGE ANTI-DISCRIMINATION AND HARASSMENT POLICIES

A. Lansing Community College is an Equal Opportunity/Affirmative Action Employer and does not discriminate on the basis of race, color, sex, age, religion, national origin, disability, marital status, height, weight or sexual orientation in any terms or conditions of employment or employment opportunities.

The College is committed to excellence in education and is an Equal Educational Opportunity college. Discrimination on the basis of religion, race, color, national origin, age, sex, height, weight, marital status, handicap, or sexual orientation is prohibited.

B. Lansing Community College has a strong commitment to maintaining an atmosphere free of all forms of discrimination, including sexual harassment. **Sexual harassment is one form of discrimination and it is unlawful. All complaints of discrimination and sexual harassment must be reported.** In an effort to establish an environment in which the dignity and worth of all members of the College community are respected, sexual harassment of students and employees at Lansing Community College is unacceptable and illegal conduct and will not be tolerated.

Sexual harassment is any unwanted attention of a sexual nature from someone in the workplace or classroom that causes discomfort or interferes with work or academic performance. Sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature when:

- Submission to such conduct is made explicitly or implicitly a term or condition of an individual's employment or status in a course, participation in a program, activity or living situation;
- Submission to or rejection of such conduct is used as a basis for evaluating academic, employment or living conditions affecting an individual; or
- Such conduct has the purpose or effect of unreasonably interfering with an individual's work or educational performance, or of creating an intimidating, hostile, or offensive environment for work, learning or living.

Examples of Sexual Harassment

Sexual harassment may take many forms and includes any sexual attention that is unwanted. The following types of conduct are given as examples of sexual harassment in the policy:

- Physical assault;
- Direct or implied threats that submission to sexual advances will be a condition of employment, work status, promotion, grades, or letters of recommendation;
- Direct propositions of a sexual nature;
- Subtle pressure for sexual activity an element of which may be conduct such as repeated and unwanted staring;
- A pattern of conduct (not legitimately related to the subject matter of a course if one is involved) intended to discomfort or humiliate, or both, that includes one or more of the following:
 - Comments of a sexual nature; or
 - Sexually explicit statements, questions, jokes, or anecdotes;
- A pattern of conduct that would discomfort or humiliate (or both) a reasonable person at whom the conduct was directed that includes one or more of the following: unnecessary touching, patting, hugging, or brushing against a person's body.

Complaints should be directed to the Office Equal Opportunity and Diversity Programs (517) 483-5232.

II. OVERVIEW OF LAWS

Federal and state laws combine to prohibit discrimination in employment based on race, color, sex, age, religion, national origin, disability, marital status, height, weight or sexual orientation. Harassment based on race, color, sex, age, religion, national origin, disability, marital status, height, weight are forms of discrimination and are therefore illegal.

The following laws prohibit employment discrimination as well as discrimination against students in educational institutions:

MI Elliott-Larsen Civil Rights Act, Sections 210 and 507

MI Handicappers' Civil Rights Act, Section 208, 403, 507

Title VII of the Civil Rights Act of 1964, 42 U.S.C. 2000e, et. seq., as amended

Age Discrimination in Employment Act, 29 U.S.C. 621, et. seq.

Section 504 of the Rehabilitation Act of 1973, 29 U.S.C. 794

Americans with Disabilities Act of 1990, 42 U.S.C. 12101

III. RETALIATION/REPRISAL

It is also illegal for anyone to take reprisal against an employee or student because that employee or student has filed a discrimination complaint or because an employee or student has assisted in a complaint proceeding.

IV. WHERE TO FILE A COMPLAINT

Any employees or students who believe that **discrimination** has occurred against themselves or others are urged to report the matter as soon as possible to:

Director, Equal Opportunity and Diversity Programs

Lansing Community College

Mail Code: 1110

2376 Gannon Vocational-Technical Center

(517) 483-5232 Office

(517) 483-9823 Fax

The Director of Equal Opportunity and Diversity Programs serves in the role as lead investigator of complaints of discrimination. The Director also serves as the campus Title IX, ADA and 504 Coordinator and can be reached at (517) 483-5232.

Students may file **non-discrimination** complaints, allegations of harassment and appeals with the Director of Student Relations. The college's appeal process for non-discrimination complaints will be utilized to resolve these matters. For copies of the appeal form or further information contact:

Director, Student Relations

Lansing Community College

Mail Code: 1000

211 Student Personnel Services Building

(517) 483-1764 Office

(517) 483-1629 Fax

Employees and students also have the right to file discrimination complaints with the Michigan Department of Civil Rights (MDCR), Federal Equal Employment Opportunity Commission (EEOC) or Office of Civil Rights (OCR). In addition, employees in bargaining units have access to grievance procedures according to their relevant union contract. Utilization of the College's internal complaint procedure does not preclude employees from filing in other forums.

If an employee or student has a reason for not wishing to report a matter to the Director of Equal Opportunity and Diversity Programs and/or Director of Student Relations, the employee should contact the President's Office (483-1851) or Provost's Office (483-5240). In such a case, the President may appoint a designee to process the complaint. Furthermore, employees and students may contact vice presidents and/or dean's offices in their respective divisions to bring forth complaints.

V. PROCEDURES FOR FILING COMPLAINTS

The grievance procedures and guidelines below are for Lansing Community College students and employees who file a complaint regarding discrimination and/or sexual harassment. The investigation of all sexual harassment/discrimination complaints will be handled through the Office of Equal Opportunity and Diversity Programs.

A. Responsibility To Report

Prompt reporting of all complaints is critical and necessary as it is often difficult to trace the facts of an incident or incidents long after they have occurred. It is

recommended that complaints be filed within sixty (60) calendar days of the alleged incident. All complaints will be investigated. The Director of Equal Opportunity and Diversity Programs is given the responsibility to identify and respond with the appropriate level of fact finding for discrimination complaints.

B. Retaliation/Reprisal

It is unlawful for any individual to be subjected to retaliation and/or discrimination because he or she has opposed any practice, made a charge, testified, assisted or participated in an investigation/fact finding in any manner.

C. Receiving a Complaint

If staff receive a complaint from a student or an employee regarding discrimination and/or sexual harassment, ask the student or employee to complete a complaint form and then forward the signed form to the Director of Equal Opportunity and Diversity Programs Office. Discrimination/sexual harassment forms are available in the following offices: College Human Resources Office, Executive Office, Divisional Dean's Offices, Vice Presidents' Offices and the Equal Opportunity and Diversity Programs Office.

Do not investigate or discuss the complaint with others. Confidentiality should be maintained by all involved in the complaint to protect the creditability and integrity of the fact finding process.

If for some reason the form is not filled out, report the name of the complainant, and his/her phone number, if known, to the Director of Equal Opportunity (EO) and Diversity Programs and encourage the complainant to contact the Director of EO.

D. Investigation Procedures

Actions may be taken by the Director of EO to informally resolve a complaint which include, but are not limited to:

- listening to the complainant to determine desired action;
- advising the parties about the College's anti-discrimination policy and procedures;
- having the complainant meet with the respondent and the Director of EO to discuss the complaint; and
- meeting with supervisors or other appropriate individuals to resolve the matter.

The Director of EO may investigate the complaint or designate a person(s) or team of individuals who have proper training and expertise to investigate the alleged complaint.

E. Functions of the Investigator or Investigation Team

1. To help educate the LCC community about discrimination and/or sexual harassment.
2. To assist in the investigation of complaints of discrimination and/or sexual harassment brought by LCC students or employees.
3. To make recommendations for resolution, corrective action and/or disciplinary action when designated by the Director of EO.

F. Timetable

An investigation will begin no later than ten (10) working days following the receipt of the discrimination/sexual harassment complaint form or immediately following a request from the EO Officer. The investigation will conclude once all appropriate information has been gathered or witnesses interviewed.

G. Complainants

The Director of EO will contact the complainant and inform him/her when the investigation will occur. The complainant may be asked to submit additional information, if necessary, for the investigation to continue. An exit interview will be conducted with the complainant to review the results of the fact finding.

H. Notification

The Director of EO will inform the **alleged** harasser/discriminator of the complaint as soon as is practicable or if appropriate, within the timeliness specified within the designated Master Agreement. The results of the investigation will be reviewed with the alleged harasser/discriminator in the exit interview upon the completion of the fact finding.

VI. CONFIDENTIALITY

Sharing information pertaining to a complaint should be on a "need to know" basis only. **It should be noted, however, that the College cannot guarantee confidentiality.**

At each step of this procedure, the College will take appropriate action to protect the privacy of individuals involved in the complaint. Both in fact finding and in the final disposition of the complaint, efforts will be made to maintain confidentiality.

During the investigation stage, the College may have to contact witnesses or other individuals. This will not be considered a breach of confidentiality. All witnesses will be requested to maintain confidentiality in the fact finding process. Witnesses should understand that they may be called upon to testify in a civil hearing or an arbitration case at some future date.

VII. RESOLUTION

Based on the results of the investigation, appropriate action will be taken by the College. Complaints may be dismissed or resolution could include disciplinary action up to and including dismissal or expulsion.

If through an investigation of discrimination and/or sexual harassment other wrong doings are found, these issues will be dealt with separately from the discrimination and/or sexual harassment complaint.

STUDENT LIFE PROCEDURES

POSTER REGULATIONS FOR STUDENTS AND STUDENT ORGANIZATIONS

Lansing Community College is continually sensitive to the fact that there is a need for students, staff, and offices to communicate regarding various activities, events, and services. The College is also sensitive to the right of freedom of expression, particularly as provided for in the First Amendment of the Constitution of the United States. At the same time, the College is responsible for providing reasonable procedures and regulations to protect public and private property, and provide for the general safety and welfare of all members of the College community, and which preclude disruption of the normal functions of the College.

The following statements are designed to regulate the use of posters within the College facilities while providing students, College personnel, and College properties reasonable protection from commercial exploitation and court suits. While the courts have said that College property is considered a "public trust," these same courts have ruled that College property is not "public property" subject to unregulated use by any and all individuals. This regulation is designed to facilitate communication through the use of posters while complying with the legislated instructional mission of the College.

DEFINITION: A poster is any written communication designed to apply to a wall or other surface for the purpose of relating information about an event, service, idea, or activity. A poster may be in the format of, but not limited to, a sign, an announcement, or banner.

General Poster Regulations

1. Within any and all buildings, placement of all signs and posters is restricted to approved bulletin boards.
2. Each poster must identify the sponsoring organization, department, or individual (no abbreviations). Each poster must display a telephone number or an office location where more complete information can be obtained.
3. Each poster is required to have in the lower left-hand corner, its posting date (month, day, and year) and, in the lower right-hand corner, its date (month, day, and year) to be removed. Each poster should be up for a reasonable length of time depending upon the activity.
4. Designated bulletin boards are available in each building for the posting of student and staff personal notices. All student and staff personal notices will be confined to these designated bulletin boards.
5. A poster shall not exceed 18 inches by 24 inches.
6. No poster shall be placed in such a way that it covers all or part of a previously posted approved poster whose take-down date has not expired.
7. The removal of posters at or prior to the take-down date shall be the responsibility of the sponsoring organization or individual. No posters shall be removed prior to the take-down date by unauthorized individuals.
8. Lansing Community College respects the constitutional rights of freedom of expression. There are, however, responsibilities which are attendant to the exercising of these constitutional rights. The following statement is made to provide an operational balance between the rights and responsibilities of the freedom of expression regarding the contents of posters: The content of posters shall avoid the liabilities of libel, obscenity, invasion of privacy, and incitement of disorder, violence, and disruption of the normal operation of the College.

9. Students and student organizations wanting to post posters must gain approval in the Office of Student Life for compliance with general regulations.
10. College staff and faculty must gain approval in their departmental office or from the office of their administrative supervisor
11. Student and College staff personal notices placed in designated bulletin boards within the College buildings do not need approval. Examples of personal notices are selling used books, sharing a ride, sharing an apartment, and selling personal articles. Profit-making commercial notices are not considered personal and will be removed.

Student or Student Organization Appeal of Poster Denial or Removal

If a student or student organization feels that a denial of posting or removal of a poster infringes upon their First Amendment rights or is in violation of this regulation, an informal appeal may be made by the poster sponsor to the Director of Student Life. A meeting will be held between the appealing poster sponsor or sponsors with the Director of Student Life to discuss the appeal. If the appeal is not resolved, a formal appeal may be presented to the Director of Student Relations. This appeal must be in writing, must indicate the reason(s) for the appeal, and must be dated and signed by the appealing party. The Director of Student Relations will gather information and respond to the appealing party within five (5) days of receipt of the appeal. If the student or student organization is not satisfied with the response of the Director of Student Relations, a second written appeal may be made to the Director of Student Relations. This written appeal must contain the reason(s) for the appeal, and a copy of the poster must be made available to the Dean of Student and Academic Support Division for review. The appeal to the Dean of Student and Academic Support Division must be dated and signed by the appealing party. The Dean of Student and Academic Support Division will gather information and respond to the appealing party within five (5) days of receipt of the appeal, giving the decision rendered and reason(s) therefore. The decision of the Dean of Student and Academic Support Division shall be final.

Failure to comply with the above regulations will lead to the denial of approval, the removal of posters, and/or disciplinary action. In order to protect the student body, individual members of the College community and the resources of the College, the College reserves the right and accepts the responsibility to deny approval or remove any poster or posters which it believes to cause significant disruption of the normal function and operation of the College.

Poster Regulations for Off-Campus Organizations and Individuals

Lansing Community College is sensitive to the fact that there is a need for some off-campus organizations and individuals involved in non-commercial enterprises to communicate with Lansing Community College students and staff members concerning various activities, events, and services. The College is also sensitive to the right of expression, particularly as provided for in the First Amendment of the Constitution of the United States. At the same time, the College is responsible for providing reasonable procedures and regulations to protect public and private property and providing for the general safety, welfare, and positive learning environment for all members of the College community.

Therefore, the College has provided a kiosk, centrally located on the downtown campus, for the use of noncommercial groups and individuals who are not affiliated with the College. Such groups and individuals may place their posters on this kiosk without seeking prior approval from any College office, and the College disclaims any and all responsibility for items posted.

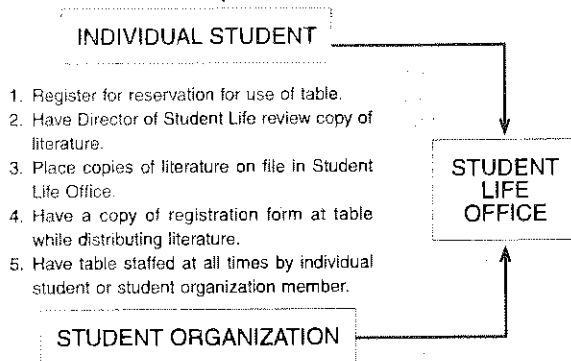
REGULATIONS FOR USE OF STUDENT LITERATURE TABLE

Lansing Community College is continually aware of and supportive of the concepts of freedom of expression, particularly those provided by the First Amendment of the Constitution of the United States. The College also perceives that one of its functions is to provide a wide range of learning experiences and learning opportunities for the students of the College. At the same time, the College is mandated to provide orderly processes which avoid material disruption, protect public and private property, and provide for the general safety and welfare of students, faculty, and College staff.

The following statements are designed to facilitate student distribution of literature within the College facilities, while providing students and College personnel and property reasonable protection from commercial exploitation and legal actions. Court rulings have determined that College buildings, while considered a public

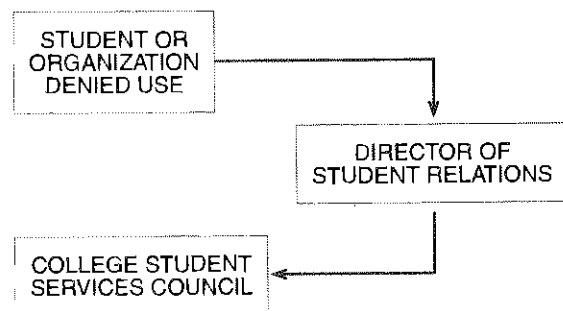
trust, are not considered public property subject to unregulated use by any and all individuals. The procedural regulations below are designed to facilitate the legislated instructional mission of the College to serve the citizens of the College community. The following procedural regulations shall be followed:

1. The distribution of literature within College buildings by students shall be limited to student literature tables made available for such distribution. Student literature tables will be made available in the following areas within the College buildings:
 - a. In the entry lobby outside the second floor cafeteria of the Arts and Sciences Building.
 - b. In the second floor lobby of the Gannon Vocational-Technical Center.
 - c. In the second floor lobby area of the Old Central Building.
 At least two single tables will be available in each of these areas. The maximum number of tables made available in any area will be determined in a reasonable manner based on the use of the area and regulations regarding fire safety and student welfare.
2. Only registered students and College-recognized student clubs and organizations shall have access to the student literature tables. Non-students who wish to use college facilities must gain permission by following procedures established for this purpose through the Student Life Office.
3. The student literature tables will be available Mondays through Thursdays from 8 A.M. to 10 P.M. and Fridays 8 A.M. to 5 P.M. during the days of regularly scheduled semesters.
4. Registered students and College-recognized clubs and organizations are required to register for the use of the student literature tables with the Student Life Office at least 72 hours prior to the time of desired use. Registrations will be accepted on a first request-first serve basis. Individual students and recognized student clubs or organizations may register for the use of a table for three consecutive days. If there are no pending requests, a registration may be renewed at the end of a previous registration. If there are no pending requests, a recognized student club or organization may request the use of more than one table or more than one location. If during the use of multiple tables or locations, additional students or recognized student groups request the use of a table or location and additional tables or locations are not available, the multiple user or users will be required to give up the multiple use of tables and locations to provide for the new request.
5. A copy of the completed registration form obtained from the Student Life Office must be available at the student literature table while distribution is taking place.
6. In order to determine accountability, a sample of the material to be distributed must be placed on file with the Student Life Office at the time of the registration for use. In addition, a recognized student club or organization must have a copy of the material to be distributed on file with the club's or organization's advisor.
7. The student literature table will be staffed at all times by the individual student or members of the recognized student club or organization registered for the use of the tables while the distribution of materials is taking place. The registered student or recognized club or organization will have the responsibility to ensure that the distribution process is orderly at all times and that the general area surrounding the student literature tables is not littered.
8. Individuals shall have the option to pick literature from the tables or receive a copy from the individuals sitting at the tables. No literature shall be forced upon any individual nor shall there be any obstructions created in the path of the general flow of traffic.
9. Individual students or recognized student clubs and organizations may collect funds for worthy causes, such as muscular dystrophy, blood drives, or College-sponsored activities. There shall be no commercial solicitations of funds or business, nor shall individual students solicit funds for personal gain.
10. The College has the right and responsibility to halt the distribution of literature which it believes to be libelous, obscene, an invasion of privacy, or literature designed and reasonably believed that it will have the effect to cause immediate disruption of classes, violence, or substantial disorder of the normal operations of the College.
11. Failure to comply with the above procedural regulations may lead to the denial of the use of the student literature tables and/or may lead to disciplinary action.

Literature Table Use Request Flow Chart**Appeal of Denial of Use of Literature Table**

Any individual, registered student, or recognized student club or organization which has been denied access to the student literature tables or has been required to halt distribution based on procedure 10 may appeal the denial or requirement to halt distribution. The appeal shall be in writing and shall be directed to the Director of Student Relations within 10 calendar days of the denial or requirement to halt distribution. The Director of Student Relations shall make a prompt investigation of the appeal, contacting the parties involved, and shall, within 10 calendar days from the date of appeal, make a decision to reinstate the distribution rights denied or halted or to uphold the original decisions. If the decision of the Director of Student Relations is not satisfactory, the individual student or recognized student club or organization may appeal the decision to the College Student Services Council. This second appeal must be in writing and presented to the Chairperson of the College Student Services Council within 10 calendar days of the decision of the Director of Student Relations. The College Student Services Council shall make a prompt investigation of the appeal, contacting parties involved, and shall within 10 calendar days from the date of the appeal, make a decision to reinstate the distribution rights or upholding the denial or required halt of distribution. The decision of the College Student Services Council shall be final.

Where it is contemplated that a violation of the student literature distribution procedural regulation warrants the imposition of disciplinary action upon an individual student, disciplinary action shall be taken in accordance with Due Process as outlined in the *Lansing Community College Catalog*.

Appeal of Denial Flow Chart**COLLEGE RESPONSIBILITIES***

Lansing Community College is committed to providing an environment and resources which promote student learning. All College employees contribute to this goal. Our commitment to learning is reflected by these responsibilities.

1. The College will maintain appropriate prerequisites so that students will enter courses with a reasonable chance of success.
2. The College will provide facilities that are safe, secure, clean, and conducive to learning.
3. The College will provide a clear and fair process for handling student complaints and concerns.

4. Faculty will be articulate and enthusiastic about their field and will establish a positive, stimulating learning atmosphere.
5. Faculty will prepare for each class; organize course concepts and present them clearly; exhibit comprehensive knowledge of the subject; teach the application of skills appropriate to course content; and make appropriate and timely use of student and instructional support services.
6. Faculty will respect students as individuals, recognizing learning styles and managing student learning accordingly.
7. Faculty will encourage classroom discussion when appropriate and represent various sides of an issue.
8. Faculty will make a standard course syllabus available to students at the beginning of the semester, provide appropriate instructional materials and assistance, and meet classes at the scheduled times.
9. Faculty will evaluate students fairly and objectively, maintain records of student achievement, and keep students informed of their progress.
10. Faculty will encourage students to think intelligently and independently.
11. Faculty will be available to assist students outside the classroom, including during regularly scheduled and posted office hours.
12. Faculty will know curriculum/program requirements and general career opportunities in their field. They will be able to advise students in their program area and refer students for academic and/or career counseling.

*SOURCES: Recommendations of the College-Wide Faculty Evaluation Committee; Current Agreement between the Board of Trustees and the Lansing Community College Chapter of the Michigan Association for Higher Education.

STUDENT RESPONSIBILITIES

In order to be successful learners, students must assume an active role in the learning process. The student responsibilities listed below emphasize behaviors that contribute directly to student academic success, and they apply to all students enrolled at the College.

1. Students will take responsibility for their own learning and for succeeding in their courses by:
 - a. Following course requirements as presented in course syllabi;
 - b. Attending all of their classes;
 - c. Preparing for classes and completing assignments on time;
 - d. Contacting their instructor regarding work missed in the case of an absence;
 - e. Cooperating with their instructor and other students to create a positive learning atmosphere;
 - f. Contributing effectively to class activities.
2. Students will be academically and intellectually honest in all classes, examinations, and learning activities. (The College, by regulation, will discipline students who cheat and/or copy the work of others; dishonesty is a serious offense and will be dealt with appropriately.)
3. Students will contribute to a positive learning environment by conducting themselves appropriately. (The College prohibits acts which interfere with the rights of others to seriously pursue an education. For more details on the regulations of the College, see section entitled *Student Rights, Responsibilities, and Conduct*.)

SPECIAL PROGRAMS AND SERVICES

Lansing Community College provides many special programs and services for students, including those which are briefly described below. For a comprehensive listing, descriptions, and locations of all special programs and services available at the College, students should consult *The Student's Handbook*. Copies of *The Student's Handbook* may be obtained from the Student Life Office, Room 200F, Gannon Vocational-Technical Center.

The **Career and Employment Services (CES) Department** provides the following services to students, alumni, employers and community members:

- **Career Counseling**—Career counseling involves self-assessment testing, career information, and career decision making assistance.

- **Employment Counseling**—Employment counseling which includes job search techniques, resume and cover letter development, interviewing skill development, and employment projections.
- **Job Search**—CES provides employer job postings, job fairs, and an Internet resume file accessible by employers. Job postings are on a Web-based system called 1st Place which is available for use by students and alumni seven days a week, 24-hours per day. 1st Place and other links to job boards may be found on the Internet at www.lansing.cc.mi.us/ces.
- **Professional Assessments**—CES provides career planning and decision-making, apprenticeships, competencies in specified areas, employer hiring and development, and certification testing.
- **Resources**—CES provides a wide range of information involving careers, college majors, employment projections, labor market trends, "hot jobs," salary ranges, and company data.

Career and Employment Services has a Website which provides an in-depth view of services and information. The site is located at www.lansing.cc.mi.us/ces.

Counseling and Advising Services include personal counseling to identify and assist in resolving students' personal and interpersonal issues and concerns; referral to community human services agencies for further professional assistance; career counseling and educational planning to facilitate career decisions, choice of major, and course selection.

The Office of Extension and Community Education (ECE) offers educational services to LCC's on and off-campus students. More than 20 Learning Centers currently exist in Lansing and the six surrounding counties. Classes offered at these off-campus centers include general education core requirements, as well as personal interest courses. Students can register for classes and arrange for assessment testing and advising in select locations. ECE's two full-service facilities are the Livingston County Center in Howell and the Wilson Center in St. Johns. Each center provides on-site registration, academic counseling, financial aid advising, career planning, assessment testing, computer labs, math labs and free parking. Continuing Education classes are offered through the ECE office along with several youth programs including Summer College, Summer Camp and Saturday School.

International Programs coordinates overseas study through such programs as the Japan Adventure and a network of sister college exchange relationships and offers ESL courses for international students at the English Language and Culture Center.

The Lansing Community College Foundation supports students, faculty, programs, and facilities through private sector fund-raising in the community. Scholarship awards to students and allocations to LCC programs are coordinated by the Foundation Board of Directors in support of the mission and goals of the College.

Library Information Services provides information and research assistance, library resources, a computerized catalog, interlibrary loan service, book renewals by phone, library instruction, and Internet access to the library catalog and electronic databases from on and off-campus. The library also has 600 study seats, including 33 multimedia and 15 group study rooms.

The Multicultural Center promotes a campus environment responsive to the needs of LCC's diverse students, faculty and staff. Staff facilitate minority students' access to appropriate services to ensure their career and academic success. Programs within the Multicultural Center include:

- **The Limited English Proficiency Program**—provides counseling, academic advising, registration assistance, financial aid assistance, multilingual translations and intensive English training for students with limited English skills (telephone number: 517-483-1216).
- **Minority Outreach and Recruitment**—assists in the recruitment of minority students; develops and maintains community contact with various minority organizations, clubs, and associations; identifies problems and removes barriers that inhibit minority students' success; coordinates and plans special cultural/ethnic observations and celebrations; and serves as an advocate on behalf of minority students (telephone number: 517-483-1059).
- **Native American Leadership Program (NALP)**—provides counseling and academic advising and assistance with admissions, registration, and financial aid for Native American students (telephone number: 517-483-1059).
- **Mentoring Program**—provides mentors for first-semester students to advise and support them during their time of transition and adjustment to Lansing Community College (telephone number: 517-483-9803).

The Office of Equal Opportunity and Diversity Programs educates the campus community about equal opportunity, affirmative action, and multiculturalism. Office staff resolve complaints of discrimination and other concerns related to employment and terms and conditions of employment or admission.

- **ADA/504 Coordinator**—The Director of Equal Opportunity serves as the ADA/504 Coordinator. The Director works with students, faculty and staff who have concerns relating to physical and programmatic accessibility, a disability and/or reasonable accommodations (telephone number: 517-483-5232).
- **Title IX Coordinator**—The Director of Equal Opportunity serves as the Title IX Coordinator. The Director works with faculty, staff and students to resolve concerns pertaining to discrimination on the basis of sex in education programs and activities (telephone number: 517-483-5232).
- **Diversity Programs**—The Office of Equal Opportunity and Multicultural Center provide cultural educational experiences through national speakers and cultural workshops. Staff work with the campus community to institutionalize diversity throughout the curriculum and provide cross cultural communication training and development opportunities (telephone number: 517-483-5232).

New Student Orientation (START)—START (Student Advising and Registration Times) is an orientation and registration program for new students. It includes orientation to LCC, academic advising and the earliest registration opportunity available to new students. Peer advisors, academic advisors, and counselors are on hand to help students select courses that will transfer or contribute toward a degree or certificate program, depending on the student's goal. Students must complete skill assessments in reading, writing, and math prior to attending START. For more information, call (517) 483-5323.

The Student Life Office enhances student leadership, development, and success through involvement in and exposure to diverse experiences and opportunities. These include Student Senate, a comprehensive student leadership development experience consisting of the Student Advisory Committee to the President, Student Organization Council, and the Student Leadership Academy; student clubs and organizations; student activities, such as low-cost travel opportunities; campus programming of guest artists and student workshops, lectures and forums; and opportunities to work on the staff of *The Lookout*, Lansing Community College's student newspaper. The Student Life Office also includes the Office of Volunteer Services which provides volunteer placement opportunities for students and staff to nurture, promote, and instill the spirit of volunteerism. The Student Life Office also provides a housing resource listing service.

Tutoring Services, offered through Library Information Services, provides free tutoring to students enrolled in LCC courses. Professional and peer tutors, technicians and peer tutors help students develop course competencies and study skills, individual appointments, study groups, Supplemental Instruction, and drop-in tutoring sessions are available on a first-come-first-served basis.

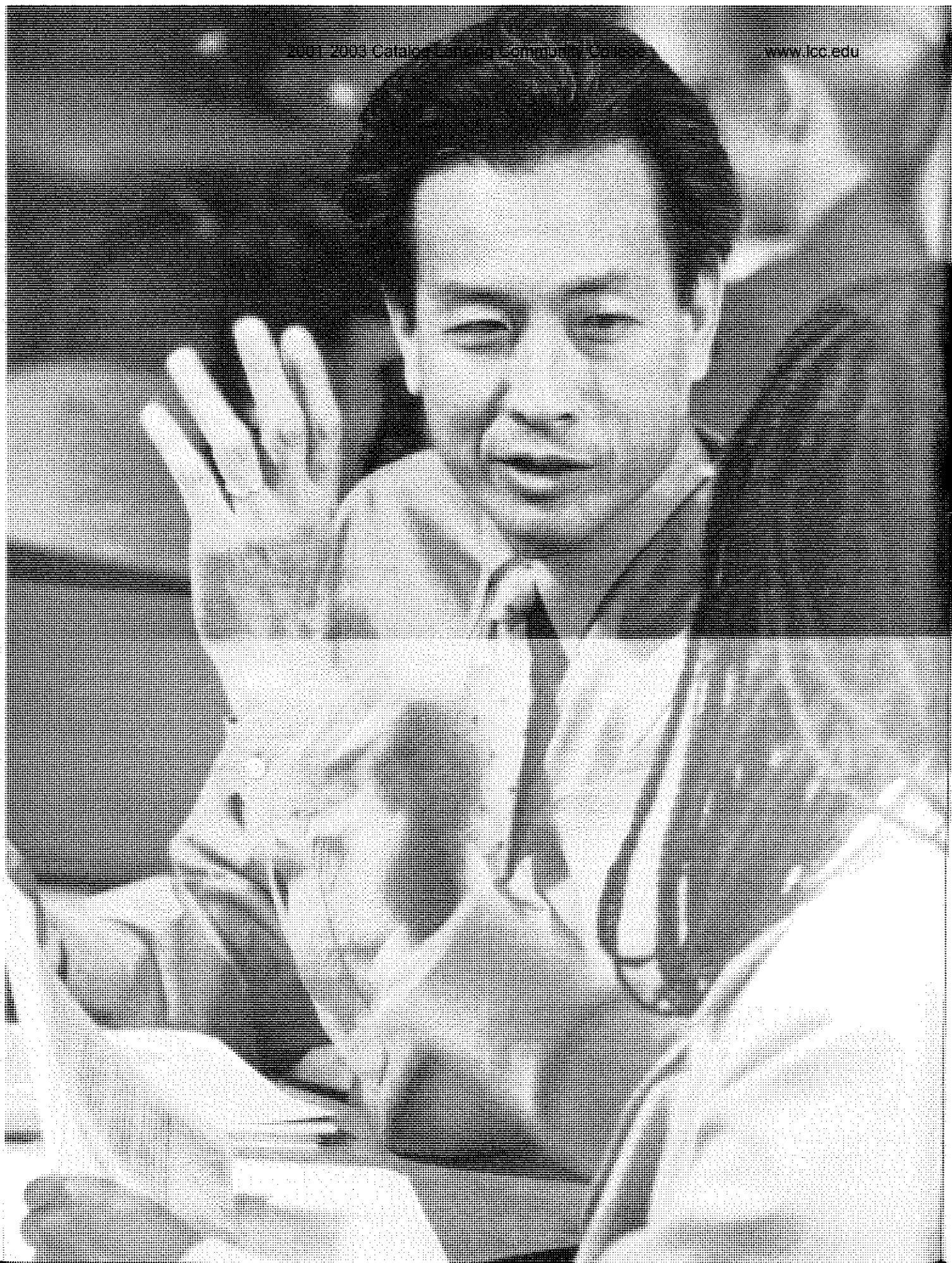
The Women's Resource Center provides services and programs in support of women and men at Lansing Community College, including financial assistance with tuition, textbooks, transportation, and child care costs, academic advising, reentry support, and referral services.

INFORMATION FOR PERSONS WITH DISABILITIES

Lansing Community College is committed to making accommodations and providing services for persons with disabilities. The College has administrative and faculty specialists who respond to visual, hearing, mobility, and alternative learning accommodation needs. They can be reached at Disability Support Services (517) 483-1904 (Voice), or (517) 483-1207 (Voice/TTY). The College adheres to the standards and guidelines set forth in the Americans With Disabilities Act.

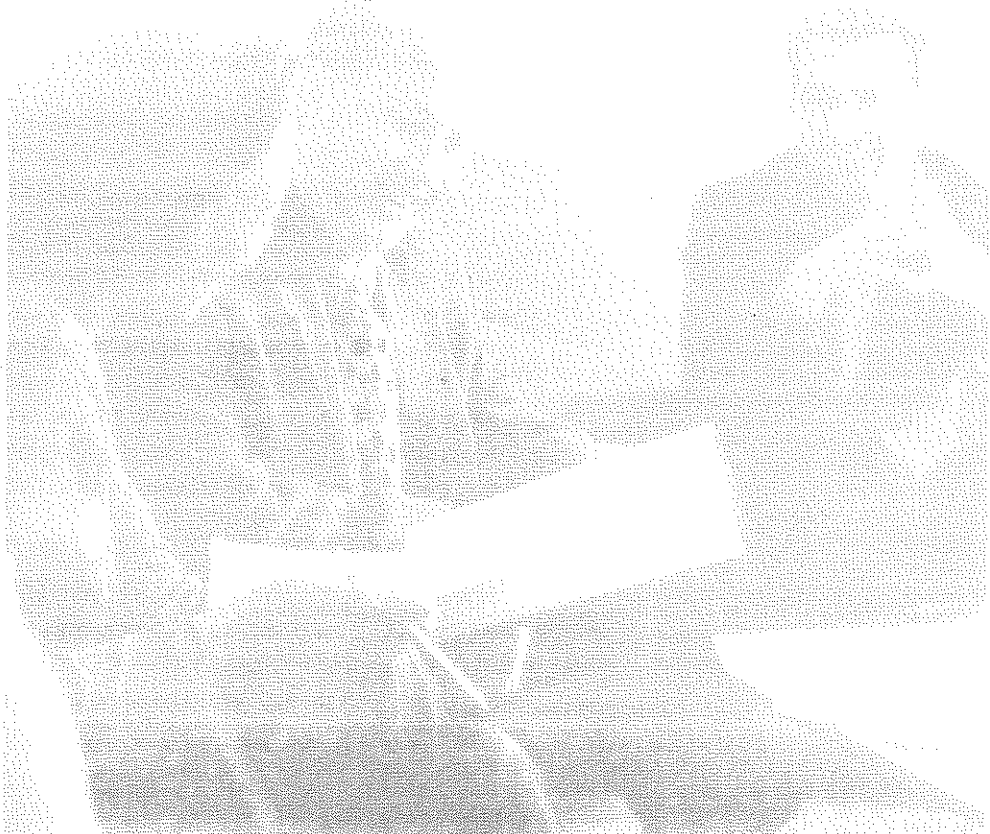
To be eligible for services and accommodations through ODSS, students are required to provide written verification of their disability. Documentation must be signed and dated by a qualified professional who has diagnosed the disability. If necessary, the ODSS staff can help students find the appropriate professionals to diagnose their disability. Students must have documentation of a disability on file in ODSS offices before services and accommodations for classes can be provided.

Handicap-accessible parking is available and clearly identified at Lansing Community College. For more information, call the office of Parking Services at (517) 483-1798.



Business & Community Institute

LANSING COMMUNITY COLLEGE 2001-2003 CATALOG





Training and Services for Business, Industry, Government and Professionals

What BCI Can Do for You

The BCI is your most comprehensive resource for training and consulting for business and workforce development in mid-Michigan. We provide a broad spectrum of consulting services and learning solutions that improve our customers' organizational performance. We help them build leaders, increase productivity, boost sales performance, manage change, improve verbal and written communication, thrive on diversity and, at the bottom line, measure effectiveness. During the past year, we served nearly 12,000 people in more than 350 organizations.

Types of Programs and Services Offered

BCI can provide your organization with a variety of programs, either non-credit/CEU or contact hour-based courses and seminars or Lansing Community College credit courses selected from this Catalog. Other services of BCI include training needs assessment, job profiling and skill development, organization development consulting, and facilities rental and conference services. The Small Business Development Center offers counseling and training to help you start and maintain your own small business.

Here is a sampling of areas addressed by our training programs:

- Small Business Development
- Computer Software Applications/Business Software
- Technical Skills
- Human Resource Development
- Quality Assurance and Productivity Improvement
- Leadership and Management Skills
- Computer-Aided Design and Computer-Aided Manufacturing (CAD/CAM)

Where Programs Are Offered

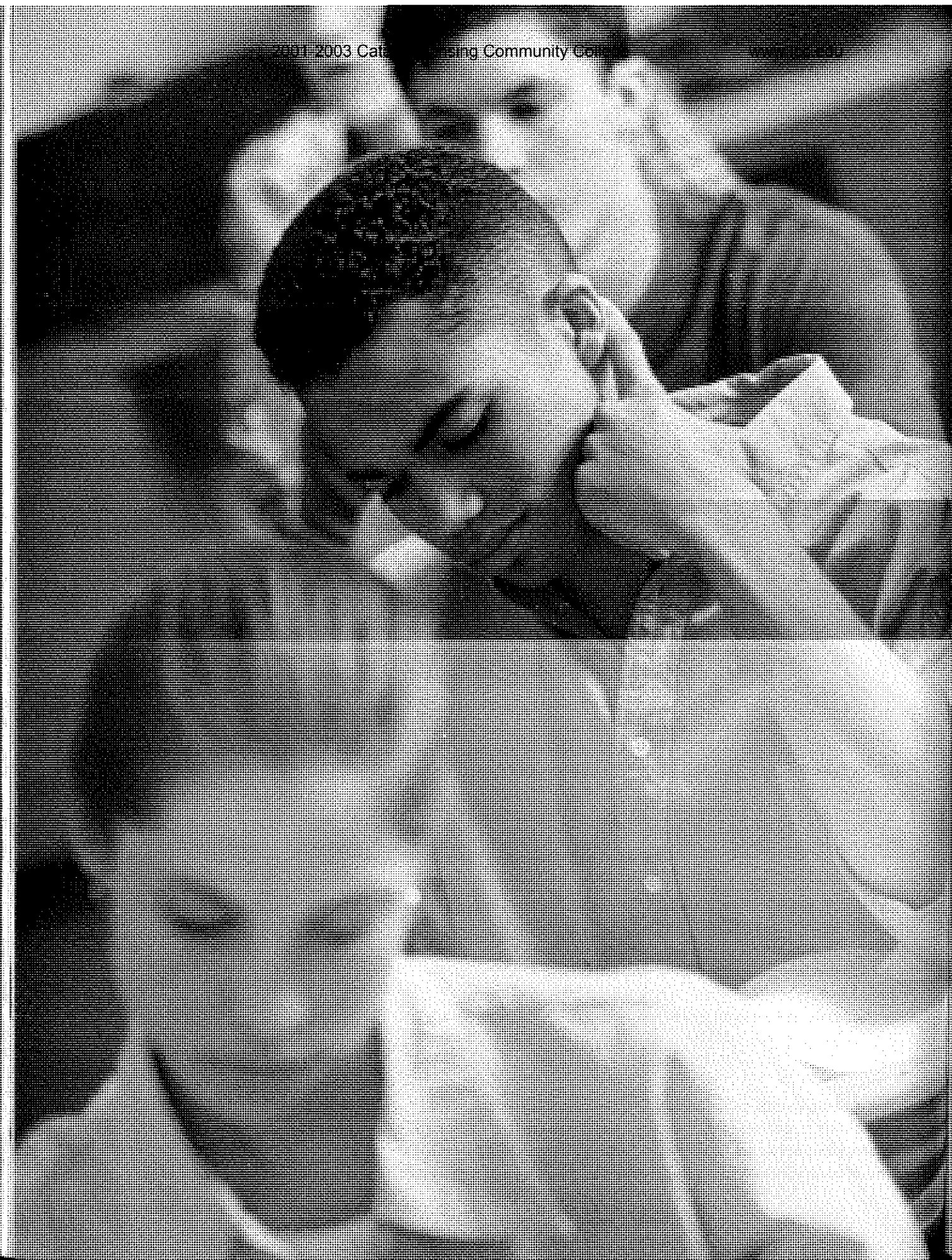
Programs can be offered on-site at your place of business. Programs may also be held on the LCC campus in downtown Lansing, at the Livingston County Center, at one of our suburban Learning Center sites, or at any suitable location arranged between BCI and the sponsoring employer. Our Laptop Lab has traveled to many companies to provide on-site computer software training. We can train on-site using company equipment for some customized technical training programs. You choose what best suits your needs.

Let BCI staff partner with you to meet your business needs in a cost-effective way. Call the Business & Community Institute at (517) 483-1857, or call LCC's toll-free line at 1-800-644-4LCC and ask to be connected to the BCI today. Visit the BCI Web site at <http://www.lansing.cc.mi.us/bci/>

Degree and Certificate Programs

LANSING COMMUNITY COLLEGE 2001-2003 CATALOG





ASSOCIATE IN ARTS DEGREE

EFFECTIVE FALL 2001-SUMMER 2006

This is primarily a transfer degree. It is designed for students who intend to transfer to a four-year college or university to pursue a baccalaureate degree in such disciplines or subject areas as the following:

Pre-Accounting	Fine Arts	Philosophy
African American History	Foreign Language	Political Science
American Studies	Geography	Psychology
Art History	History	Religion
Pre-Business	Humanities	Secondary Education
Criminal Justice	International Studies	Social Science
Pre-Economics	Liberal Arts	Sociology
Elementary Education	Literature	Speech Communication

The specific requirements for this degree are presented below. A minimum of 60 credits is required. This degree guide consists of General Education Requirements and a Subject Area Concentration which may include Limited Choice Electives. The curriculum is structured to enable students to satisfy the LCC General Education Core Requirements, as well as the MACRAO Transfer Agreement between two-year and four-year institutions in Michigan.

Students should see the "Course Descriptions" section of this catalog or the Course Schedule for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

NOTE: Students should be aware that general education and subject area requirements vary from one college or university to another. Prior to beginning this curriculum, students should see an academic advisor or counselor in the Counseling and Advising Center (Suite 2300, Gannon [GVT] Building, telephone number (517) 483-1904), obtain an appropriate transfer guide (also in the Counseling and Advising Center), and/or contact the school to which they will transfer for specific transfer institution requirements. (See "Transfer Information" in this section of the Catalog for a list of institutions for which transfer guides are available.)

In addition, students may request specific course substitutions by submitting a Course Substitution and Waiver Authorization for Degree Screening Form to the Liberal Studies Office of Instruction, Room 110, Arts and Sciences Building.

I. GENERAL EDUCATION REQUIREMENTS Minimum 35 credits

By following the directions in this section and earning at least a 2.0 in each course, students will automatically be able to satisfy the following general education requirements:

- Lansing Community College General Education Core Requirements in the areas of mathematics, global perspectives and diversity, writing, science and technology, and speech communication. (Complete information about LCC Core requirements can be found on page 22 of this catalog.)
- The MACRAO Transfer Agreement. (See "Transfer Information" in this section of the Catalog for a complete list of MACRAO requirements.)
- Additional General Education Requirements established specifically for this Associate in Arts Degree.

Students who complete Core courses other than those indicated below, and who wish to apply those credits toward the Associate in Arts Degree, should contact a faculty advisor or counselor in Suite 2300 of the GVT Building, telephone number (517) 483-1904.

Before selecting general education courses, students should consult II (SUBJECT AREA CONCENTRATIONS AND LIMITED CHOICE ELECTIVES) below for possible recommendations and requirements. Credits for each course have been indicated in parentheses.

(NOTE: In this section, *courses that satisfy the LCC General Education Core Requirements have an asterisk (*) preceding them.*)

- #### 1. English Composition 8 credits
- Completing any one of the courses listed in this section satisfies the LCC General Education Core Requirement in writing.
- Complete *one* course from the following: *WRIT 121 (4) or *WRIT 131 (4)
AND
 - Complete *one* course from the following:
*WRIT 122 (4) *ENGL 122 (4) *WRIT 132 (4) *ENGL 132 (4)
OR
 - If WRIT 121 is waived, select ENGL 122 or WRIT 122, AND a second WRIT or ENGL course with a number of 200 or higher.

2. Science and Mathematics

Minimum of 8 credits

Completing at least one asterisked (*) course from A or B will satisfy the LCC General Education Core Requirement in science and technology.

Completing any asterisked (*) course from C will satisfy the LCC General Education Core Requirement in mathematics. If C is not chosen, then the LCC Core requirement for mathematics must be met by one of the options described on page 22 of this catalog.

A minimum of 8 credits must be chosen from *two* of the three groups below (A, B, and C).

A. Physical Science

*ASTR 201 (4)	GEOL 222 (4)	*METR 220 (4)
*CHEM 135 (4)	GEOL 230 (4)	PHYS 201 & 225 (5)
*CHEM 151 & 161 (5)	*ISCI 121 (4)	*PHYS 215 & 225 (6)
GEOL 221 (4)	*ISCI 131 (4)	

B. Biological Science

BIOL 120 (4)	BIOL 201 (4)	BIOL 260 (4)
BIOL 121 (4)	*BIOL 202 (4)	BIOL 265 (4)
BIOL 127 (4)	BIOL 203 & 204 (4)	ISCI 122 (4)
BIOL 128 (4)	*BIOL 210 (4)	PFHW 123 (3)
BIOL 145 (4)		

C. Mathematics and Statistics

*MATH 121 (4)	*MATH 128 (3)	*MATH 151 (4)	STAT 170 (3)
*MATH 122 (3)	*MATH 130 (3)	*MATH 152 (4)	STAT 215 (4)
*MATH 126 (5)	*MATH 141 (3)	*MATH 201 (3)	

3. Social Science

Minimum of 3 credits

Completing at least *one* asterisked (*) course from Category 3 (Social Science) OR Category 4 (Humanities) will satisfy the LCC General Education Core Requirement in Global Perspectives and Diversity.

- Complete *one* course in Political Science from the following:

POLS 120 (4) or POLS 121 (4)

- Complete 4-6 credits from the following:

ANTH 270 (3)	GEOG 120 (3)	PSYC 202 (3)	*SOCL 120 (4)
ECON 120 (4)	GEOG 200 (4)	PSYC 203 (3)	SOCL 255 (3)
ECON 201 (3)	*POLS 266 (3)	PSYC 205 (3)	
ECON 202 (3)	PSYC 200 (4)	PSYC 250 (3)	

4. Humanities

8 credits

Completing at least *one* asterisked (*) course from Category 3 (Social Science) OR Category 4 (Humanities) will satisfy the LCC General Education Core Requirement in Global Perspectives and Diversity.

- Complete *one* of the following combinations:

HIST 211(4) and 212(4) or 214(4)	*PHIL 211(4) and *212(4)
*HUMS 213(4) and *214(4)	RELG 211(4) and 212(4)
*ENGL 211(4) and *212(4)	

OR

- Complete eight credits (8 credits) from the list below in two different areas.

- Art History: HUMS 120(4), *211(4), *212(4)
- History: HIST 150(4), 210(4), 211(4), 212(4), 214(4), 220(4), 230(4), 240(4), 250(4), 260(4)
- Humanities: HUMS 160(4), *213(4), *214(4), 215(4)
- Literature: ENGL 201(4), 202(4), 203(4), *211(4), *212(4), 255(4), 256(4), 260(4), 266(4), 267(4), 270(4), 290(4)
- Performing Arts: MUSC 199(2), 240(4), 241(4); THEA 210(4)
- Philosophy: PHIL 151(4), 152(4), 153(4), *211(4), *212(4), 260(4)
- Religion: RELG 211(4), 212(4), 241(4), 242(4), 250(4)

5. Communication

3-4 credits

Completing the asterisked (*) course from Category 5 will satisfy the institutional Core requirement in Speech Communication.

- Foreign Language: FREN 121(4), 122(4), 201(4), 202(4), GRMN 121(4), 122(4), 201(4), 202(4), JAPN 121(4), 122(4), SPAN 121(4), 122(4), 201(4), 202(4)
- Sign Language: SIGN 161(3)
- Speech: SPOH *120(3), 130(3)

II. SUBJECT AREA CONCENTRATIONS AND LIMITED CHOICE ELECTIVES

Minimum of 25 credits

The following Subject Area Concentrations list the remaining required and recommended courses that will apply toward an Associate in Arts Degree. Some concentrations also contain Limited Choice Electives which are presented at the end of this section. Courses should be selected in consultation with an academic advisor or counselor to determine their transferability to a specific four-year school. Credits for each course have been indicated in parentheses.

PRE-ACCOUNTING*Curriculum Code: 0254*

1. Complete ECON 201 and ECON 202 to satisfy part of the Social Science General Education Requirements.
2. Complete MATH 121 to satisfy part of the Science and Mathematics General Education Requirements.
3. Complete the following required courses (15 credits):

ACCG 210	Principles of Accounting I (4)
ACCG 211	Principles of Accounting II (4)
MATH 141	Calculus with Applications (3)
STAT 215	Intro to Probability and Stats (4)
4. Complete one of the following (3-4 credits):

CISB 100	Intro Computer Info Systems (3)
CISB 120	Intro to Programming/Logic (4)
CPSC 120	Introduction to Computers (3)
5. Complete one of the following (3 credits):

MATH 122	College Algebra II and Trig (3)
MATH 130	Finite Mathematics (3)
6. Complete a minimum of 2-3 credits from the list of Limited Choice Electives at the end of this section.

AFRICAN AMERICAN HISTORY*Curriculum Code: 0137*

1. Complete courses other than HIST 211, HIST 212, and HIST 214 to satisfy the Humanities General Education Requirement.
2. Complete the following required courses (20 credits):

HIST 150	African-American History (4)
HIST 211	U.S. History to 1877 (4)
HIST 212	U.S. History: 1877 to Present (4)
HIST 214	African History (4)
HIST 260	Conflict & Revolu Southern Africa (4)
3. Complete a minimum of 7 credits from the following:

ENGL 260	African-American Literature (4)
SOCL 255	Contemporary Social Problems (3)

 Any foreign language with course numbers 121, 122, 201, or 202 (4)

AMERICAN STUDIES*Curriculum Code: 0142*

1. Complete courses other than HIST 211, HIST 212, and HIST 214 to satisfy the Humanities General Education Requirement.
2. Complete the following required courses (20 credits):

ENGL 255	American Literature I (4)
ENGL 256	American Literature II (4)
HIST 211	U.S. History to 1877 (4)
HIST 212	U.S. History: 1877 to Present (4)
HUMS 215	American Civilization (4)
3. Complete a minimum of 8 credits from the following:

ENGL 260	African-American Literature (4)
HIST 150	African-American History (4)
HIST 220	Michigan History (4)
POLS 120	American Political System (4)

ART HISTORY*Curriculum Code: 0746*

1. Complete HIST 211 or HUMS 213 and complete HIST 212, HIST 214 or HUMS 214 to satisfy the Humanities General Education Requirement.
2. Complete the following required courses (20 credits):

HUMS 160	Mythology (4)
HUMS 211	History of Art I (4)
HUMS 212	History of Art II (4)
RELG 211	World Religions I (4)
RELG 212	World Religions II (4)
3. Complete a minimum of 8 credits from the following:

ENGL 211	World Literature I (4)
ENGL 212	World Literature II (4)
HUMS 120	Western Art and Music History (4)

 Any foreign language with course numbers 121, 122, 201, or 202 (4)

PRE-BUSINESS*Curriculum Code: 0232*

1. Complete ECON 201 and ECON 202 in addition to POLS 120 or POLS 121 to satisfy the Social Science General Education Requirement.
2. Complete MATH 121 to satisfy part of the Science and Mathematics General Education Requirement.
3. Complete the following required courses (11 credits):

ACCG 210	Principles of Accounting I (4)
ACCG 211	Principles of Accounting II (4)
BUSN 118	Introduction to Business (3)
4. Complete one of the following (3 credits):

CISB 100	Intro Computer Info Systems (3)
CPSC 120	Introduction to Computers (3)
5. Complete one of the following (3-4 credits):

ECON 213	U.S. Economic/Business History (3)
MATH 141	Calculus with Applications (3)
MATH 151	Calculus I (4)
PSYC 200	Introduction to Psychology (4)
SOCL 120	Introduction to Sociology (4)
STAT 215	Intro to Probability and Stats (4)
6. Complete a minimum of 5-6 credits from the list of Limited Choice Electives at the end of this section.

CRIMINAL JUSTICE*Curriculum Code: 0146*

1. Complete the following required courses (15 credits):

CJUS 101	Intro to Criminal Justice (3)
CJUS 102	Crime Causes and Conditions (3)
CJUS 103	Criminal Law (3)
CJUS 106	Intro to Juvenile Justice (3)
CJUS 131	Introduction to Corrections (3)
2. Complete a minimum of 10 credits from the following:

CJUS 255	Human Relations/Criminal Just (3)
PSYC 200	Introduction to Psychology (4)
PSYC 202	Psychology of Personality (3)
PSYC 203	Social Psychology (3)
PSYC 205	Human Growth and Development (3)
PSYC 250	Abnormal Psychology (3)
SOCL 120	Introduction to Sociology (4)
SOCL 255	Contemporary Social Problems (3)
SOCL 260	Minority Groups (3)

PRE-ECONOMICS

Curriculum Code: 0230

1. Complete ECON 201 and ECON 202 to satisfy part of the Social Science General Education Requirements.
2. Complete MATH 121 to satisfy part of the Science and Mathematics General Education Requirements.
3. Complete the following required courses (**6 credits**):
 CPSC 120 Introduction to Computers (3)
 MATH 122 College Algebra II and Trig (3)
4. Complete a minimum of **17 credits** from the following:
 ACGG 210 Principles of Accounting I (4)
 ACGG 211 Principles of Accounting II (4)
 ECON 213 U.S. Economic/Business History (3)
 MATH 141 Calculus with Applications (3)
 MATH 151 Calculus I (4)
 MATH 152 Calculus II (4)
 MATH 253 Calculus III (4)
 MATH 254 Intro: Differential Equations (3)
 MATH 260 Linear Algebra (3)
 PSYC 200 Introduction to Psychology (4)
 SOCL 120 Introduction to Sociology (4)
 STAT 215 Intro to Probability and Stats (4)
 • Any foreign language with course numbers 121, 122, 201, or 202 (4)
 • A second science course so that you complete both a biological science and a physical science (4-6)

ELEMENTARY EDUCATION

Curriculum Code: 0747

1. Complete POLS 120 and SOCL 120 to satisfy the Social Science General Education Requirement.
2. Complete the following required courses (**17 credits**):
 ARTS 240 Art for Elementary Teachers (3)
 EDUC 201 Teacher Education Practicum (2)
 EDUC 220 Introduction to Education (3)
 MATH 201 Math for Elemen Teachers I (3)
 MUSC 200 Music Fund for Elemen Teachers (3)
 PSYC 204 Educational Psychology (3)
3. Complete **8-10 credits** from the following list:
 ANTH 270 Cultural Anthropology (3)
 GEOG 121 Physical Geography (3)
 GEOG 200 World Regional Geography (4)
 ENGL 208 Children's Literature (4)
 ENGL 220 Science Fiction (4)
 ENGL 255 American Literature I (4)
 ENGL 256 American Literature II (4)
 ENGL 267 British Literature II (4)
 PSYC 200 Introduction to Psychology (4)
 PSYC 205 Human Growth and Development (3)
 PSYC 221 Child Psychology (3)
 SOCL 260 Minority Groups (3)

FINE ARTS

Curriculum Code: 0748

1. Complete HUMS 211 and HUMS 212 to satisfy the Humanities General Education Requirement.
2. Complete the following required courses (**12 credits**):
 ARTS 102 2-Dimensional Design (3)
 ARTS 103 3-Dimensional Design (3)
 ARTS 131 Drawing I (3)
 ARTS 132 Life Drawing (3)

3. Complete **8 credits** from the following:

ARTS 140	Printmaking I (4)
ARTS 141	Printmaking II (4)
ARTS 145	Screen Printing I (4)
ARTS 146	Screen Printing II (4)
ARTS 200	Painting I (4)
ARTS 201	Painting II (4)
ARTS 204	Watercolor I (4)
ARTS 205	Watercolor II (4)

4. Complete a minimum of **7 credits** from the list of Limited Choice Electives at the end of this section.

FOREIGN LANGUAGE

Curriculum Code: 0132

1. Complete the following required course (**3 credits**):
 SPCH 280 Intercultural Communication (3)
2. Complete one of the following *four* choices (A, B, C, D) (**16 credits**):
 A. FREN 121 Elementary French I (4)
 FREN 122 Elementary French II (4)
 FREN 201 Intermediate French I (4)
 FREN 202 Intermediate French II (4)
 B. GRMN 121 Elementary German I (4)
 GRMN 122 Elementary German II (4)
 GRMN 201 Intermediate German I (4)
 GRMN 202 Intermediate German II (4)
 C. JAPN 121 Elementary Japanese I (4)
 JAPN 122 Elementary Japanese II (4)
 JAPN 201 Intermediate Japanese I (4)
 JAPN 202 Intermediate Japanese II (4)
 D. SPAN 121 Elementary Spanish I (4)
 SPAN 122 Elementary Spanish II (4)
 SPAN 201 Intermediate Spanish I (4)
 SPAN 202 Intermediate Spanish II (4)
3. Complete a minimum of **8 credits** of any foreign language with course numbers 121, 122, 201, or 202 *other than* those chosen as the major language of concentration from the choices in Number 2 above.

GEOGRAPHY

Curriculum Code: 0749

1. Complete GEOG 200 to satisfy part of the Social Science General Education Requirement.
2. Complete the following required courses (**9 credits**):
 GEOG 120 Introduction to Geography (3)
 GEOG 121 Physical Geography (3)
 GEOG 202 Geography of North America (3)
3. Complete a minimum of **16 credits** from the following:
 ANTH 270 Cultural Anthropology (3)
 ECON 120 Power, Authority and Exchange (4)
 GEOG 203 Economic Geography (3)
 GRET 205 Principles Geographic Info Sys (3)
 METR 220 Introduction to Meteorology (4)
 POLS 260 Comparative Political Systems (3)
 POLS 270 International Relations (3)
 SOCL 120 Introduction to Sociology (4)
 STAT 170 Introduction to Statistics (3)
 Any foreign language with course numbers 121, 122, 201, or 202 (4)

HISTORY

Curriculum Code: 0197

- Complete courses *other than* HIST 211, HIST 212, and HIST 214 to satisfy the Humanities General Education Requirement.
- Complete the following required courses (12 credits):

HIST 211	U.S. History to 1877 (4)
HIST 212	U.S. History: 1877 to Present (4)
HIST 214	African History (4)
- Complete a minimum of 16 credits from the following:

ENGL 255	American Literature I (4)
ENGL 256	American Literature II (4)
HIST 150	African-American History (4)
HIST 210	Studies in American History (4)
HIST 220	Michigan History (4)
HIST 230	British History (4)
HIST 260	Conflict & Revolu Southrn Africa (4)
RELG 250	Religions of East Asia (4)

HUMANITIES

Curriculum Code: 0119

- Complete courses *other than* HUMS 213 and HUMS 214 to satisfy the Humanities General Education Requirement.
- Complete the following required courses (8 credits):

HUMS 213	World Civilizations I (4)
HUMS 214	World Civilizations II (4)
- Complete a minimum of 20 credits from the following:

ENGL 201	Introduction to Poetry (4)
ENGL 202	Introduction to Drama (4)
ENGL 203	Introduction to Prose (4)
ENGL 211	World Literature I (4)
ENGL 212	World Literature II (4)
ENGL 255	American Literature I (4)
ENGL 256	American Literature II (4)
HIST 211	U.S. History to 1877 (4)
HIST 212	U.S. History: 1877 to Present (4)
HUMS 120	Western Art and Music History (4)
HUMS 160	Mythology (4)
HUMS 211	History of Art I (4)
HUMS 212	History of Art II (4)
PHIL 151	Intro: Logic & Critical Think (4)
PHIL 152	Introduction to Ethics (4)
PHIL 153	Knowledge and Reality (4)
PHIL 211	World Philosophies I (4)
PHIL 212	World Philosophies II (4)
RELG 211	World Religions I (4)
RELG 212	World Religions II (4)

INTERNATIONAL STUDIES

Curriculum Code: 0252

- Complete GEOG 200 and POLS 120 to satisfy the Social Science General Education Requirement.
- Complete HUMS 213 and HUMS 214 to satisfy the Humanities General Education Requirement and the Global Diversity Core Requirement.
- Complete *one* of the following (3 credits):

POLS 260	Comparative Political Systems (3)
POLS 270	International Relations (3)
- Complete 8 credits of any foreign language with course numbers 121, 122, 201, or 202.

- Complete a minimum of 14 credits from the following:

ANTH 270	Cultural Anthropology (3)
ANTH 271	Medical Anthropology (3)
ECON 120	Power, Authority and Exchange (4)
ECON 201	Principles of Economics-Micro (3)
ECON 202	Principles of Economics-Macro (3)
ENGL 211	World Literature I (4)
ENGL 212	World Literature II (4)
GEOG 203	Economic Geography (3)
HIST 214	African History (4)
HIST 230	British History (4)
PHIL 211	World Philosophies I (4)
PHIL 212	World Philosophies II (4)
POLS 280	Politics & Government of Japan (3)
PSYC 200	Introduction to Psychology (4)
RELG 211	World Religions I (4)
RELG 212	World Religions II (4)
SOCL 120	Introduction to Sociology (4)
SOCL 180	Intro to Latino Studies (3)
SOCL 185	Intro to African-American Study (3)
SOCL 260	Minority Groups (3)
SOCL 280	Intro to Japanese Culture (3)

LIBERAL ARTS

Curriculum Code: 0251

Complete a minimum of 25 credits from the list of Limited Choice Electives at the end of this section. A maximum of 6 of those credits may come from any courses numbered 110 to 119 or with course codes ENRI, READ, or SPEL. The following courses are *recommended* choices.

BIOL 210	Natural Resource Conservation (4)
CHEM 135	Chemistry in Society (4)
CPSC 120	Introduction to Computers (3)
ENGL 256	American Literature II (4)
MATH 128	Mathematics: A Practical Survey (3)
PHIL 152	Introduction to Ethics (4)
PSYC 200	Introduction to Psychology (4)
SOCL 120	Introduction to Sociology (4)
SPCH 230	Intercultural Communication (3)

Any foreign language with course number 121, 122, 201, or 202 (4)

LITERATURE

Curriculum Code: 0124

- Complete the following required courses (12 credits):

ENGL 201	Introduction to Poetry (4)
ENGL 202	Introduction to Drama (4)
ENGL 203	Introduction to Prose (4)
- Complete a minimum of 16 credits from *one* of the following choices (A,B):

A.	ENGL 208	Children's Literature (4)
	ENGL 255	American Literature I (4)
	ENGL 256	American Literature II (4)
	ENGL 260	African-American Literature (4)
	ENGL 266	British Literature I (4)
	ENGL 267	British Literature II (4)
	ENGL 290	Shakespeare (4)
	HUMS 160	Mythology (4)
	PHIL 151	Intro: Logic & Critical Think (4)
	RELG 241	Old Testament Literature (4)
	Any foreign language with course numbers 121,122,201,or 202(4)	
B.	EDUC 201	Teacher Education Practicum (2)
	EDUC 220	Introduction to Education (3)
	ENGL 255	American Literature I (4)
	ENGL 256	American Literature II (4)
	PSYC 200	Introduction to Psychology (4)
	PSYC 204	Educational Psychology (3)

PHILOSOPHY

Curriculum Code: 0159

1. Complete courses *other than* PHIL 211 and PHIL 212 to satisfy the Humanities General Education Requirement.
2. Complete the following required courses (**12 credits**):
 PHIL 151 Intro: Logic & Critical Think (4)
 PHIL 211 World Philosophies I (4)
 PHIL 212 World Philosophies II (4)
3. Complete a minimum of **16 credits** from the following:
 HUMS 120 Western Art and Music History (4)
 HUMS 213 World Civilizations I (4) (See Note 1)
 HUMS 214 World Civilizations II (4) (See Note 1)
 HUMS 225 Grt Lake Native Amer:Hist & Trad (4)
 PHIL 152 Introduction to Ethics (4) (See Note 2)
 PHIL 153 Knowledge and Reality (4) (See Note 2)
 PHIL 260 Contemporary Ethical Problems (4)
 RELG 250 Religions of East Asia (4)
 Any foreign language with course numbers 121, 122, 201, or 202 (4)

NOTES:

1. HUMS 213 and HUMS 214 may be used to fulfill the General Education Requirement if not already selected to fulfill the Humanities General Education Requirement listed in number 1 above.
2. Students may elect to take either PHIL 152 *OR* PHIL 153 but not both.

POLITICAL SCIENCE

Curriculum Code: 0750

1. Complete POLS 120 *and* SOCL 120 to satisfy the Social Science General Education Requirement.
2. Complete HIST 211 *and* 212 to satisfy the Humanities General Education Requirement.
3. Complete the following required courses (**7 credits**):
 POLS 121 State and Local Government (4)
 POLS 260 Comparative Political Systems (3)
4. Complete a total of **18 credits** from A and B below:
 - A. Complete **9-12 credits** from the following:
 POLS 205 Government Internship (3)
 POLS 206 Advanced Government Internship (3)
 POLS 240 Introduction to Public Policy (3)
 POLS 250 Amer Pol Parties/Interest Grps (3)
 POLS 270 International Relations (3)
 POLS 280 Politics & Government of Japan (3)
 - B. Complete **7-9 credits** from the following:
 CPSC 120 Introduction to Computers (3)
 ECON 120 Power, Authority and Exchange (4)
 ECON 201 Principles of Economics-Micro (3)
 ECON 202 Principles of Economics-Macro (3)
 GEOG 200 World Regional Geography (4)
 SOCL 180 Intro to Latino Studies (3)
 SOCL 185 Intro to African-American Study (3)
 SOCL 255 Contemporary Social Problems (3)
 SOCL 260 Minority Groups (3)
 STAT 170 Introduction to Statistics (3)
 Any foreign language with course numbers 121, 122, 201, or 202 (4)

PSYCHOLOGY

Curriculum Code: 0215

1. Complete PSYC 200 to satisfy part of the Social Science General Education Requirement.
2. Complete a minimum of **25 credits** from the following:
 - A. Complete a minimum of **12 credits**:
 PSYC 202 Psychology of Personality (3)
 PSYC 203 Social Psychology (3)
 PSYC 205 Human Growth and Development (3)
 PSYC 209 Cognitive Psychology (3)
 PSYC 210 Biological Psychology (3)
 PSYC 250 Abnormal Psychology (3)
 - B. Complete a minimum of **13 credits**:
 ANTH 270 Cultural Anthropology (3)
 ANTH 271 Medical Anthropology (3)
 ECON 201 Principles of Econ-Micro (3)
 POLS 240 Introduction to Public Policy (3)
 POLS 260 Comparative Political Systems (3)
 PSYC 175 Psych of Death: Prep for Living (3)
 PSYC 204 Educational Psychology (3)
 PSYC 221 Child Psychology (3)
 PSYC 222 Adolescent Psychology (3)
 PSYC 240 Psychology of Human Sexuality (3)
 SOCL 120 Introduction to Sociology (4)
 SOCL 254 Marriage and Family (3)
 SOCL 255 Contemporary Social Problems (3)
 SOCL 260 Minority Groups (3)
 Any foreign language with course numbers 121, 122, 201, or 202 (4)

RELIGION

Curriculum Code: 0751

1. Complete courses *other than* RELG 211 and RELG 212 to satisfy the Humanities General Education Requirement.
2. Complete the following required courses (**8 credits**):
 RELG 211 World Religions I (4)
 RELG 212 World Religions II (4)
3. Complete a minimum of **19-20 credits** from the following:
 ANTH 270 Cultural Anthropology (3)
 PHIL 152 Introduction to Ethics (4) (See Note 1)
 PHIL 260 Contemporary Ethical Problems (4) (See Note 1)
 RELG 241 Old Testament Literature (4)
 RELG 242 New Testament Literature (4)
 RELG 250 Religions of East Asia (4)
 Any foreign language with course numbers 121, 122, 201, or 202 (4)

NOTE:

1. Students may elect to take either PHIL 152 *OR* PHIL 260 but not both.

SECONDARY EDUCATION

Curriculum Code: 0752

1. Complete POLS 120 and SOCL 120 to satisfy the Social Science General Education Requirement.
2. Complete the following required courses (15 credits):

EDUC 201	Teacher Education Practicum (2)
EDUC 220	Introduction to Education (3)
PSYC 200	Introduction to Psychology (4)
PSYC 205	Human Growth and Development (3)
3. Complete a minimum of 10 credits from the list of Limited Choice Electives numbered 120 or higher at the end of this section in the subject area in which you plan to teach.

SOCIAL SCIENCE

Curriculum Code: 0121

1. Complete SOCL 120 to satisfy part of the Social Science General Education Requirement.
2. Complete the following required courses (11 credits):

ECON 201	Principles of Economics-Micro (3)
GEOG 200	World Regional Geography (4)
PSYC 200	Introduction to Psychology (4)
3. Complete one course from two of the following choices (A, B, C, D, E) (6 credits):

A.	ECON 202	Principles of Economics-Macro (3)
B.	GEOG 120	Introduction to Geography (3)
	GEOG 121	Physical Geography (3)
	GEOG 202	Geography of North America (3)
C.	POLS 240	Introduction to Public Policy (3)
	POLS 250	Amer Pol Parties/Interest Grps (3)
	POLS 260	Comparative Political Systems (3)
	POLS 270	International Relations (3)
D.	PSYC 202	Psychology of Personality (3)
	PSYC 203	Social Psychology (3)
	PSYC 204	Educational Psychology (3)
	PSYC 205	Human Growth and Development (3)
	PSYC 221	Child Psychology (3)
	PSYC 222	Adolescent Psychology (3)
	PSYC 250	Abnormal Psychology (3)
E.	ANTH 270	Cultural Anthropology (3)
	ANTH 271	Medical Anthropology (3)
	ANTH 275	Physical Anthr and Archeology (3)
	ANTH 276	World Archeology (3)
	SOCL 180	Introduction to Latino Studies (3)
	SOCL 185	Intro to African-American Study (3)
	SOCL 254	Marriage and Family (3)
	SOCL 255	Contemporary Social Problems (3)
	SOCL 260	Minority Groups (3)
4. Complete a minimum of 8 credits numbered 120 or higher from the list of Limited Choice Electives at the end of this section. Courses in social sciences, foreign languages, statistics, computer science and mathematics are recommended.

SOCIOLOGY

Curriculum Code: 0753

1. Complete POLS 120 and SOCL 120 to satisfy the Social Science General Education Requirement and the Global Diversity Core Requirement.
2. Complete the following required courses (9 credits):

ANTH 270	Cultural Anthropology (3)
SOCL 255	Contemporary Social Problems (3)
SOCL 260	Minority Groups (3)
3. Complete a minimum of 16 credits with a minimum of one course from each section below:

A.	ECON 120	Power, Authority and Exchange (4)
	ECON 201	Principles of Economics-Micro (3)
	ECON 202	Principles of Economics-Macro (3)
	GERO 100	Introduction to Aging (3)
	POLS 240	Introduction to Public Policy (3)
	POLS 250	Amer Pol Parties/Interest Grps (3)
	POLS 260	Comparative Political Systems (3)
	POLS 270	International Relations (3)
	SOCL 254	Marriage and Family (3)
B.	ANTH 271	Medical Anthropology (3)
	ANTH 275	Physical Anthropology (3)
	ANTH 276	World Archaeology (3)
	GEOG 200	World Regional Geography (4)
	GEOG 203	Economic Geography (3)
	SOCL 180	Introduction to Latino Studies (3)
	SOCL 185	Intro to African-American Study (3)
	SOCL 280	Introduction to Japanese Culture (3)
C.	CJUS 102	Crime Causes and Conditions (3)
	CPSC 120	Introduction to Computers (3)
	PSYC 200	Introduction to Psychology (4)
	PSYC 203	Social Psychology (3)
	STAT 170	Introduction to Statistics (3)

SPEECH COMMUNICATION

Curriculum Code: 0136

1. Complete SOCL 120 to satisfy part of the Social Science General Education Requirement.
2. Complete the following required courses (9 credits):

SPCH 130	Fundamentals of Public speaking (3)
SPCH 140	Interpersonal Communication (3)
SPCH 280	Intercultural Communication (3)
3. Complete a minimum of 6 credits from the following:

SPCH 110	Oral Communic in the Workplace (3)
SPCH 260	Nonverbal Communication (3)
SPCH 270	Mass Communication (3)
4. Complete a minimum of 10 credits from the following:

(Note: Students who elect foreign language courses are encouraged to take both first-year courses (121 and 122) in the language of their choice.)

ANTH 270	Cultural Anthropology (3)
CPSC 120	Introduction to Computers (3)
LING 230	Introduction to Linguistics (3)
PHIL 151	Intro: Logic & Critical Think (4)
POLS 260	Comparative Political Systems (3)
PSYC 200	Introduction to Psychology (4)

Any foreign language with course numbers 121, 122, 201, or 202 (4)

LIMITED CHOICE ELECTIVES FOR ASSOCIATE IN ARTS DEGREE

Some concentrations include limited choice electives. Those limited choice electives must be selected from the following:

1. Courses numbered 120 to 294 with any of the course codes listed below:

ANTH	EDUC	HIST	LING	PSYC	SPAN
ASTR	ENGL	HONR	MATH	READ	SPCH
BIOL	FREN	HUMS	METR	RELG	STAT
CHEM	GEOG	ISCI	PHIL	SOCL	WRIT
CPSC	GEOL	JAPN	PHYS	SOWK	
ECON	GRMN	JRNL	POLS		

2. Courses on the list below:

ACCG 210, 211, 220, 221, 230, 231, 240, 241, 250, 260, 271, 280, 290
 ARTS 102, 103, 131, 132, 137, 140, 141, 145, 146, 151, 162, 171, 176,
 200, 201, 203, 204, 205, 206, 253
 BUSN 118, 201, 250
 CHDV 101, 111, 120, 121, 188, 189, 220, 221
 CISB 100, 120, 122, 170, 180, 250, 260, 280, 281
 CJUS 101, 102, 103, 106, 130, 131, 133, 134, 135, 201, 203, 204, 250,
 255

DANC 100, 101, 102, 103, 104, 111, 112, 113, 114, 165, 191, 201, 202,
 203, 204, 211, 212, 255, 260

EMSA 100

GRMN 115, 116

HUSE 240, 241, 242, 244

IMAG 101

LEGL 215, 216

MATH 112

MGMT 225

MKTG 140, 200, 202, 221

MUSC 101, 102, 108, 119, 123, 133, 138, 139, 144, 145, 155, 156, 163,
 164, 168, 169, 179, 180, 182, 183, 188, 193, 194, 199, 200, 221, 222,
 240, 241, 245, 248, 249, 251, 253, 263, 264, 270, 276, 280, 293, 294,
 297

SIGN 161, 162, 163, 164

SOWK 101

THEA 110, 120, 140, 150, 181, 210, 220, 234, 285, 295, 296

3. A maximum of two credit hours from courses with any of the course codes listed below:

PFAQ	PFDA	PFHC	PFIS	PFPR
PFCW	PFFT	PFHW	PFOA	PFTS

ASSOCIATE IN SCIENCE DEGREE

EFFECTIVE FALL 2001-SUMMER 2006

This is primarily a transfer degree. It is designed for students who intend to transfer to a four-year college or university to pursue a baccalaureate degree in such disciplines or subject areas as the following:

Biology	Kinesiology
Chemistry	Mathematics/Physics
Computer Science	Medical Pre-Professional
Environmental Science	Pre-Engineering
Geoscience	

The specific requirements for this degree are presented below. A minimum of 60 credits is required. This degree guide consists of General Education Requirements and a Subject Area Concentration. The curriculum is structured to enable students to satisfy the LCC General Education Core Requirements, as well as the MACRAO Transfer Agreement between two-year and four-year institutions in Michigan.

Students should see the "Course Descriptions" section of this catalog or the Course Schedule for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

NOTE: Students should be aware that general education and subject area requirements vary from one college or university to another. Prior to beginning this curriculum, students should see an academic advisor or counselor in the Counseling and Advising Center (Suite 2300, Gannon [GVT] Building, telephone number (517) 483-1904), obtain an appropriate transfer guide (also in the Counseling and Advising Center), and/or contact the school to which they will transfer for specific transfer institution requirements. (See "Transfer Information" in this section of the Catalog for a list of institutions for which transfer guides are available).

In addition, students may request specific course substitutions by submitting a Course Substitution and Waiver Authorization for Degree Screening Form to the Liberal Studies Office of Instruction, Room 110, Arts and Sciences Building.

I. GENERAL EDUCATION REQUIREMENTS Minimum of 35 credits

By following the directions in this section and earning at least a 2.0 in each course, students will automatically be able to satisfy the following general education requirements:

- Lansing Community College General Education Core Requirements in the areas of mathematics, global perspectives and diversity, writing, science and technology, and speech communication. (Complete information about LCC Core requirements can be found on page 22 of this catalog.)
- The MACRAO Transfer Agreement. (See "Transfer Information" in this section of the Catalog for a complete list of MACRAO requirements.)
- Additional General Education Requirements established specifically for this Associate in Science Degree.

Students who complete Core courses other than those indicated below, and who wish to apply those credits toward the Associate in Arts Degree, should contact a faculty advisor or counselor in Suite 2300 of the GVT Building, telephone number (517) 483-1904.

Before selecting general education courses, students should consult II (SUBJECT AREA CONCENTRATIONS) below for possible recommendations and requirements. Credits for each course have been indicated in parentheses.

(NOTE: In this section, courses that satisfy the LCC General Education Core Requirements have an asterisk [*] preceding them.)

1. English Composition 8 credits

Completing any one of the courses listed in this section satisfies the LCC General Education Core Requirement in writing.

- Complete one course from the following: *WRIT 121 (4) or *WRIT 131 (4)
AND
- Complete one course from the following:
*WRIT 122 (4) *ENGL 122 (4) *WRIT 132 (4) *ENGL 132 (4)
OR
- If WRIT 121 is waived, complete ENGL 122 or WRIT 122, AND a second WRIT or ENGL course with a number of 200 or higher.

2. Science and Mathematics Minimum of 8 credits

Completing at least one asterisked (*) course from A or B will satisfy the LCC General Education Core Requirement in science and technology.

Completing any asterisked (*) course from C will satisfy the LCC General Education Core Requirement in mathematics. If C is not chosen, then the LCC Core requirement for mathematics must be met by one of the options described on page 22 of this catalog.

- A minimum of 8 credits must be chosen from two of the three groups below (A, B, and C).

A. Physical Science

*CHEM 151 & 161 (5) GEOL 222 (4) PHYS 201 & 225(5)
GEOL 221 (4) *METR 220 (4) *PHYS 215 & 225(6)

B. Biological Science

BIOL 120 (4) BIOL 201 (4) BIOL 260 (4)
BIOL 121 (4) *BIOL 202 (4) BIOL 265 (4)
BIOL 127 (4) BIOL 203 & 204 (4) PFWH 123 (3)
BIOL 128 (4) *BIOL 210 (4)

C. Mathematics and Statistics

*MATH 121 (4) *MATH 141 (3) STAT 170 (3)
*MATH 122 (3) *MATH 151 (4) STAT 215 (4)
*MATH 126 (5) *MATH 152 (4)
*MATH 128 (3) *MATH 201 (3)
*MATH 130 (3)

3. Social Science

Minimum of 8 credits

Completing at least one asterisked (*) course from Category 3 (Social Science) OR Category 4 (Humanities) will satisfy the institutional Core requirement in Global Perspectives and Diversity.

- Complete one course in Political Science from the following:

POLS 120 (4) or POLS 121 (4)

- Complete one course from the following:

ANTH 270 (3) GEOG 200 (4) PSYC 205 (3)
ECON 120 (4) *POLS 260 (3) PSYC 250 (3)
ECON 201 (3) PSYC 200 (4) *SOCL 120 (4)
ECON 202 (3) PSYC 202 (3) SOCL 255 (3)
GEOG 120 (3) PSYC 203 (3)

4. Humanities

8 credits

Completing at least one asterisked (*) course from Category 3 (Social Science) OR Category 4 (Humanities) will satisfy the institutional Core requirement in Global Perspectives and Diversity.

- Complete one of the following combinations:

HIST 211 and HIST 212 or 214 *PHIL 211 and *212
*HUMS 213 and *214 RELG 211 and 212
*ENGL 211 and *212

OR

- Complete eight credits (8 credits) from the list below in two different areas.

ART HISTORY: HUMS 120(4), *211(4), *212(4)
HISTORY: HIST 150(4), 210(4), 211(4), 212(4), 214(4), 220(4), 230(4),
240(4), 250(4), 260(4)
HUMANITIES: HUMS 160(4), *213(4), *214(4), 215(4)
LITERATURE: ENGL 201(4), 202(4), 203(4), *211(4), *212(4), 255(4),
256(4), 260(4), 266(4), 267(4), 270(4), 290(4)
PERFORMING ARTS: MUSC 199(2), 240(4), 241(4); THEA 210(4)
PHILOSOPHY: PHIL 151(4), 152(4), 153(4), *211(4), *212(4), 260(4)
RELIGION: RELG 211(4), 212(4), 241(4), 242(4), 250(4)

5. Communication

3-4 credits

Completing the asterisked(*) course from Category 5 will satisfy the institutional Core requirement in Speech Communication.

FOREIGN LANGUAGE: FREN 121(4), 122(4), 201(4), 202(4); GRMN 121(4),
122(4), 201(4), 202(4), JAPN 121(4), 122(4), SPAN 121(4), 122(4),
201(4), 202(4)
SIGN LANGUAGE: SIGN 161(3)
SPEECH: SPCH *120(3), 130(3)

II. SUBJECT AREA CONCENTRATIONS

Minimum of 25 credits

The following Subject Area Concentrations list the remaining required and recommended courses that will apply toward an Associate in Science degree. Courses should be selected in consultation with an academic advisor or counselor to determine their transferability to a specific four-year school. Credits for each course have been indicated in parentheses.

BIOLOGY

Curriculum Code: 0221

1. Complete MATH 121, CHEM 151 and 161 to satisfy the Science and Mathematics General Education Requirement.
2. Complete the following required courses (12 credits):

BIOL 127	Cell Biology (4)
BIOL 128	Organismal Biology (4)
CHEM 152	General Chemistry Lecture II (3)
CHEM 162	General Chemistry Lab II (1)
3. Complete a minimum of 15 credits from the following:

BIOL 201	Human Anatomy (4)
BIOL 202	Human Physiology (4)
BIOL 203	Microbiology (3)
BIOL 204	Microbiology Laboratory (1)
BIOL 210	Natural Resource Conservation (4)
BIOL 260	Botany (4)
BIOL 265	Zoology (4)
BIOL 270	Human Genetics (3)
BIOL 275	Molecular Biology I (4)
CHEM 251	Organic Chemistry Lecture I (4)
CHEM 252	Organic Chemistry Lecture II(4)
CHEM 272	Organic Chemistry Laboratory (2)
ENVR 122	Enviro Sampl & Instrumentation (4)
STAT 170	Introduction to Statistics (3)

NOTE: The following is a suggested course sequence for required courses. If you are unable to follow this sequence, contact an academic advisor or counselor for help with adjustments.

I	II
BIOL 127	BIOL 128
CHEM 151	CHEM 152
CHEM 161	CHEM 162
MATH 121	

CHEMISTRY

Curriculum Code: 0117

1. Complete MATH 151, CHEM 151 and CHEM 161 to satisfy the Science and Mathematics General Education Requirement.
2. Complete the following required courses (20 credits):

(NOTE: In order to complete sequences, MATH 253, PHYS 216, and PHYS 226 are also recommended.)

CHEM 152	General Chemistry Lecture II (3)
CHEM 162	General Chemistry Lab II (1)
CHEM 251	Organic Chemistry Lecture I (4)
CHEM 252	Organic Chemistry Lecture II (4)
CHEM 262	Quantitative Analysis (2)
CHEM 272	Organic Chemistry Laboratory (2)
MATH 152	Calculus II (4)
3. Complete a minimum of 8 credits from the following:

BIOL 127	Cell Biology (4)
PHYS 215	Physics I: Mechanics (5)
PHYS 225	Physics I Laboratory (1)
STAT 215	Intro to Probability and Stats (4)

NOTE: The following is a suggested course sequence for required courses. If you are unable to follow this sequence, contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
CHEM 151	CHEM 152	CHEM 251	CHEM 252
CHEM 161	CHEM 162	CHEM 262	CHEM 272
MATH 151	MATH 152		

COMPUTER SCIENCE

Curriculum Code: 0169

1. Complete MATH 151, PHYS 215 and 225 to satisfy the Science and Mathematics General Education Requirement.
2. Complete the following required courses (20 credits):

CPSC 230	Algorithms and Computing w/C++ (4)
CPSC 231	Computing and Data Structures (4)
CPSC 260	Computer Science Structures (4)
MATH 152	Calculus II (4)
MATH 253	Calculus III (4)
3. Complete a minimum of 6 credits from the following:

(NOTE: In order to complete sequences, PHYS 216 is also recommended.)

MATH 254	Intro: Differential Equations (3)
MATH 260	Linear Algebra (3)
PHYS 216	Phys II: Electron/Wave/Optic (5)
PHYS 226	Physics II Laboratory (1)
STAT 215	Intro to Probability and Stats (4)

ENVIRONMENTAL SCIENCE

Curriculum Code: 0755

1. Complete HUMS 213 and HUMS 214 to satisfy the Humanities General Education Requirement.
2. Complete MATH 121, CHEM 151 and CHEM 161 to satisfy the Science and Mathematics General Education Requirement.
3. Complete the following required courses (22 credits):

BIOL 128	Organismal Biology (4)
BIOL 210	Natural Resource Conservation (4)
CHEM 182	Introductory Organic Chemistry (3)
CHEM 192	Intro Organic Chemistry Lab (1)
CPSC 120	Introduction to Computers (3)
GEOL 230	Environmental Geology (4)
STAT 170	Introduction to Statistics (3)
4. Complete a minimum of 4 credits from the following:

BIOL 260	Botany (4)
BIOL 265	Zoology (4)
ENVR 121	Environmental Rules and Regs (3)
ENVR 122	Enviro Sampl & Instrumentation (4)
ENVR 131	Indust Process & Pollut Preven (3)
GEOG 121	Physical Geography (3)
GRET 203	Beginning MicroStation (3)

NOTE: The following is a suggested course sequence for required courses. If you are unable to follow this sequence, contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
CHEM 151	BIOL 128	BIOL 210	GEOL 230
CHEM 161	CHEM 182		
CPSC 120	CHEM 192		
MATH 121	STAT 170		

GEOSCIENCE

Curriculum Code: 0174

1. Complete MATH 122, CHEM 151 and CHEM 161 to satisfy the Science and Mathematics General Education Requirement.
2. Complete the following required courses (16 credits):
 CHEM 152 General Chemistry Lecture II (3)
 CHEM 162 General Chemistry Lab II (1)
 GEOL 221 Physical Geology (4)
 GEOL 222 Historical Geology (4)
 GEOL 230 Environmental Geology (4)
3. Complete a minimum of 10 credits from the following:
 (NOTE: PHYS 215 & 216 may be substituted for PHYS 201 & 202 with the appropriate math background.)
 CPSC 120 Introduction to Computers (3)
 METR 220 Introduction to Meteorology (4)
 PHYS 201 Introductory Physics I (4)
 PHYS 202 Introductory Physics II (4)
 PHYS 225 Physics I Laboratory (1)
 PHYS 226 Physics II Laboratory (1)

NOTE: The following is a suggested course sequence for required courses. If you are unable to follow this sequence, contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
CHEM 151	CHEM 152		GEOL 230
CHEM 161	CHEM 162		
GEOL 221	GEOL 222		
MATH 122			

KINESIOLOGY

Curriculum Code: 0970

1. Complete MATH 122, PHYS 201 and 225 to satisfy the Science and Mathematics General Education Requirement.
2. Complete SOCL 120 or PSYC 200 to satisfy part of the Social Science General Education Requirements.
3. Complete the following required courses (28 credits) (See Note 1):
 EMSA 100 First Aid and CPR (2)
 PFHW 163 Healthy Lifestyles (2)
 PFKN 170 Foundations of Kinesiology (2)
 PFKN 250 Measurements in Kinesiology (3)
 PFKN 260 Growth & Motor Behavior (3)
 BIOL 201 Human Anatomy (4)
 BIOL 202 Human Physiology (4)
 CHEM 151 General Chemistry Lec (4)
 CHEM 161 General Chemistry Lab (1)
 PFFT 100 Total Fitness (2)
 Activity Course (1) (See Notes 2 and 3)
4. It is recommended that students also take PFHW 123 – Human Nutrition.

NOTES:

1. Kinesiology majors pursuing an Athletic Training Specialization should also complete PFKN 210 – Athletic Training Principles.
2. Kinesiology majors with an Exercise Science emphasis should complete one activity course with code PFAQ, PFCW, PFDA, PFFT, PFIS, or PFTS.
3. Kinesiology majors with a Physical Education Teaching emphasis should complete one course from each activity category: aquatics, conditioning, dance, racquet and individual sports, and team sports.

NOTE: The following is a suggested course sequence for required courses. If you are unable to follow this sequence, contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
CHEM 151	BIOL 201	BIOL 202	PHYS 201
CHEM 161	PFHW 163	PFKN 260	PHYS 225
PFKN 170	EMSA 100	MATH 122	PFKN 250

MATHEMATICS/PHYSICS

Curriculum Code: 0200

1. Complete MATH 151 and PHYS 215 and 225 to satisfy the Science and Mathematics General Education Requirement.
2. Complete the following required courses (20 credits):
 MATH 152 Calculus II (4)
 MATH 253 Calculus III (4)
 MATH 254 Intro: Differential Equations (3)
 MATH 260 Linear Algebra (3)
 PHYS 216 Phys II: Electrom/Wave/Optic (5)
 PHYS 226 Physics II Laboratory (1)
3. Complete a minimum of 5 credits from the following:
 CHEM 151 General Chemistry Lecture I (4)
 CHEM 161 General Chemistry Lab I (1)
 CPSC 230 Algorithms and Computing w/C++ (4)
 CPSC 231 Computing and Data Structures (4)
 CPSC 260 Computer Science Structures (4)
 MATH 281 Honors Math Seminar I (1)
 STAT 215 Intro to Probability and Stats (4)

NOTE: The following is a suggested course sequence for required courses. If you are unable to follow this sequence, contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
MATH 151	MATH 152	MATH 253	MATH 254
	PHYS 215	PHYS 216	MATH 260
	PHYS 225	PHYS 226	

MEDICAL PRE-PROFESSIONAL

Curriculum Code: 0754

(NOTE: Students who are planning a career in dentistry, pharmacology, medicine, physical therapy, physicians assistant, etc. could follow this curriculum.)

1. Complete PSYC 200 to satisfy part of the Social Science General Education Requirement.
2. Complete MATH 122, CHEM 151, and CHEM 161 to satisfy the Science and Mathematics General Education Requirement.
3. Complete the following required courses (16 credits):

BIOL 127	Cell Biology (4)
CHEM 152	General Chemistry Lecture II (3)
CHEM 162	General Chemistry Lab II (1)
PHYS 201	Introductory Physics I (4)
PHYS 202	Introductory Physics II (4)
4. Complete a minimum of 10 credits from the following:

BIOL 201	Human Anatomy (4)
CHEM 251	Organic Chemistry Lecture I (4)
CHEM 252	Organic Chemistry Lecture II (4)
CHEM 272	Organic Chemistry Laboratory (2)
PHYS 225	Physics I Laboratory (1)
PHYS 226	Physics II Laboratory (1)

NOTE: The following is a suggested course sequence for required courses. If you are unable to follow this sequence, contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
BIOL 127	CHEM 152	PHYS 201	PHYS 202
CHEM 151	CHEM 162		
CHEM 161	PSYC 200		
MATH 122			

PRE-ENGINEERING

Curriculum Code: 0112

1. Complete MATH 151, CHEM 151 and CHEM 161 to satisfy the Science and Mathematics General Education Requirement.
2. Complete the following required courses (21 credits):

MATH 152	Calculus II (4)
MATH 253	Calculus III (4)
MATH 254	Intro: Differential Equations (3)
PHYS 215	Physics I: Mechanics (5)
PHYS 216	Phys II: Electrom/Wave/Optic (5)
3. Complete a minimum of 5 credits from the following:

PHYS 225	Physics I Laboratory (1)
PHYS 226	Physics II Laboratory (1)
CHEM 152	General Chemistry Lecture II (3)
CHEM 162	General Chemistry Lab II (1)
CPSC 230	Algorithms and Computing w/C++ (4)
CPSC 231	Computing and Data Structures (4)
MATH 260	Linear Algebra (3)
STAT 215	Intro to Probability and Stats (4)
4. It is recommended that a student take one of the following CAD courses. These courses may not transfer to all engineering programs.

CADD 131	AutoCAD Basic 2-D (4)
CADD 242	Unigraphics Basic (4)

NOTE: The following is a suggested course sequence for required courses. If you are unable to follow this sequence, contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
CHEM 151	MATH 152	MATH 253	MATH 254
CHEM 161		PHYS 215	PHYS 216
MATH 151			

GENERAL ASSOCIATE DEGREE

Curriculum Code: 0863

EFFECTIVE FALL 2001–SUMMER 2006

This degree is a customized program of study which should be approved by an advisor. A minimum of 60 credits is required and includes the LCC General Education Core requirements. Students must also complete EITHER a minimum of 12 related credits in an area of study of their own choosing OR they must complete the credits listed on a transfer institution curriculum guide. (See *Transfer Information* in this section of the catalog for a list of institutions for which transfer guides are available.) Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES

Students should see the "Course Descriptions" section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

The requirements for this program of study are outlined below. Prior to beginning this program, students should meet with an academic advisor or counselor in the Counseling and Advising Center (Suite 2300 of the GVT building, telephone number (517) 483-1904.)

REQUIREMENTS

TOTAL: 60 CREDITS

General Education Core Areas **12 Credits**
(Mathematics competency required; See the GENERAL EDUCATION section above)

Writing Core Area	3
Speech Communication Core Area	3
Science/Technology Core Area	3
Global Perspectives and Diversity Core Area	3
Mathematics Competency <i>(See page 22 for information on how to fulfill this requirement. Course work may be needed.)</i>	

Customized Options *(Choose One Option—See Note 1)* **48 Credits**

Option A	
Credits in a Selected Area of Study	12
Elective Credits	36
Option B	
Transfer Guide Requirements <i>(See Note 2)</i>	Variable
Elective Credits <i>(See Note 3)</i>	Variable

MINIMUM TOTAL **60**

NOTES

1. Students should meet with an academic advisor or counselor prior to selecting courses for customized options.
2. Students should complete the credits required by a transfer institution on a transfer curriculum guide. See *Transfer Information* in this section of the Catalog for a list of institutions for which transfer guides are available.
3. After completing transfer guide requirements, students selecting this option may also have to complete elective credits in order to meet the 60-credit minimum required for this degree.

APPLIED DEGREES AND CERTIFICATES

The programs presented in this section lead to an associate degree in applied arts, an associate degree in applied science, an associate degree in business, or a certificate. These degree and certificate programs are designed primarily for students who seek education and the acquisition of skills needed to enter the job market or to advance their current careers. Not all courses in these programs transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

ACCOUNTING

Accounting, AB52
Accounting, CA52
Accounting, CPA Exam Prep, AB53
Managerial Accounting, AB54

AGRICULTURE

Precision Agriculture, AAS55
Precision Agriculture, CA55

ARCHITECTURE

Arch Tech, Residential Design, AAS56
Arch Tech, Residential Design, CA57
Architectural Technology, AAS58

ART, DESIGN, AND MULTIMEDIA

Computer Graphics Animation, AAA59
Computer Graphics, Multimedia, AAA60
Computer Graphics, Multimedia, CA61
Computer Graphics, Web Design, AAA62
Figure Studies, CA63
Fine Art Foundation, AAA64
Graphic Design, AAA65
Humorous Illustration, CC65

AUTOMOTIVE

Alternate Fuels, CC66
Auto AC/Electrical Accessories, CC66
Auto Body Repair, AAS67
Auto Body Repair, CA67
Auto Steer/Suspension/Brakes, CC68
Automotive Drive Lines, CC68
Automotive Technology, AAS69
Automotive Technology, CA69
Engine Performance/Diagnosis, CC70

AVIATION

Airframe Maintenance Tech, AAS71
Aviation Flight Technology, AAS72
Avionics, AAS73
Avionics Installation, CC73
Powerplant Maintenance Tech, AAS74

BUSINESS

Business Administration, AB75
E-Business, AB76
E-Business, CA76
International Business, AB77

CIVIL TECHNOLOGY

Civil Technology, AAS78

COMPUTER-AIDED DRAFTING AND DESIGN

CAD/CAM Technician, AAS79
Computer-Aided Drafting/Design, AAS80
Computer-Aided Drafting/Design, CA81

COMPUTERS

Computer Network/Communication, AB82
Computer Network/Communication, CC83
Computer Programmer/Analyst, AB84
Computer Programmer/Analyst, CC85
Computer Repair Technician, CA85
Computer Security and Controls, AB86
Electronics, Computer Tech, AAS87

Information Technology Basics, CC88
Internet for Business, CA88
Internet for Business, CC89
Microcomp Database Specialist, AB90
Microcomp Database Specialist, CA91
Microcomp Support Specialist, AB92
MOUS Master Certification Prep, CC93
PC Productivity Applications, CC93
PC User Support, CC94
Windows Programming, CC94

CONSTRUCTION

Residential Building, AAS95
Residential Building, CA95

CREDIT UNION MANAGEMENT

Credit Union Management, AB96
Credit Union Management, CC96

CRIMINAL JUSTICE

Correctional Officer, CC97
County/Local Detention Officer, CC97
Criminal Justice, Corrections, AB98
Criminal Justice, Law Enforce, AB99
Juvenile Care Worker, CA100
Mid-Michigan Police Academy, CC100

EDUCATION

Teacher Paraprofessional, CC101

ELECTRICAL

Electrical Tech, Construction, CA102
Electrical Tech, Control/Maint, CA102
Electrical Wiring, CC103
Electrical Technology, AAS104
Machine Control, CC104
Electronics Technology, AAS105
Electronics Troubleshooter, CA105

FIRE SCIENCE

Fire Science Academy, CC106
Fire Science Technology, AAS106

GEOGRAPHIC INFORMATION SYSTEMS

GIS/Geospatial Technology, AAS107
Geographic Information Systems, CA107

HEALTH CAREERS

Basic Emergency Med Services, CA108
Dental Hygienist, AAS109
Diagnostic Medical Sonography, AAS110
Diagnostic Medical Sonography, CA110
Emergency Medical Services, AAS111
Massage Therapy, CA112
Multi-Skill Patient Care Tech, CC112
Nursing, LPN Option, CA113
Nursing, RN Option, AAS114
Paramedic, CA115
Radiologic Technology, AAS116
Surgical Technology, CA117

**HEATING AND AIR CONDITIONING/
BUILDING MAINTENANCE**

Heat & Air Cond/Building Maint, AAS118
Heat & Air Cond/Building Maint, CA119

HOSPITALITY

Hotel-Motel/Food Management, AB120

HUMAN SERVICES CAREERS

Child Development, AAS121
CDA Credential Training, CC121
Child Development, CA122
Gerontology, CA122
Human Services, AAS123
Substance Abuse, CA124

INDUSTRIAL

CNC Programming, AAS125
Industrial Technology, AAS126
Industrial Technology, CA126
Machine Maintenance, AAS127
Machine Repair, CA128
Millwright, CA128
Machinist Toolmaker, AAS129
Tool and Die Maker, CA129
Welding Technology, AAS130
Welding Technology, CA130

INTERIOR DESIGN

Interior Design Technology, AAS131
Interior Design Merchandising, CC131
Kitchen/Bath Design Specialist, CA131

LANDSCAPE CAREERS

Horticulture, AAS132
Landscape Architecture, AAS133

LEGAL ASSISTANT

Legal Assistant, AB134
Legal Assistant, Post-Bachelor, CA135

MANAGEMENT

Advanced Management, CA136
Human Resource Management, AB137
Labor Relations, CC137
Management, AB138
Management, CA139
Small Business Management, CC139

MARKETING

Field Sales and Marketing, AB140
Field Sales and Marketing, CA140
Marketing, AB141
Marketing, CA141

MEDIA TECHNOLOGY

Media Technology, AAS142
Media Technology, CA143

MOTION PICTURE

Motion Picture Direction, AAS144
Motion Picture Production, AAS145
Motion Picture Production, CA145

OFFICE CAREERS

Administrative Assistant, AB146
Legal Secretary, AB147
Medical Admin Assistant, AB148
Medical Transcriptionist, AB149
Medical Transcriptionist, CA149

Office Assistant, CC150
Office Specialist: Comp Apps, CA150
Records Management, AB151

PERFORMING ARTS

Music, AAA152
Music: Commercial, AAA153
Music Management, AAA154
Sacred Music, CA155
Theatre, AAA156

PHOTOGRAPHIC IMAGING

Photographic Imaging, AAS157
Photography, CC157

REAL ESTATE

Real Estate, AB158
Real Estate, CC158

SCIENCE - APPLIED

Chemical Process Technology, AAS159
Chemical Process Technology, CA160
Chemical Technology, AAS161
Environmental Technology, AAS162
Histologic Technology, AAS163
Histologic Technician, CC163
Molecular Biotechnology, AAS164
Veterinary Technology, AAS165

SIGN LANGUAGE

Sign Language Interpreter, AAA166
Sign Language Interpreter, CA166

STAGE TECHNOLOGY

Stage Technology, AAA167
Stage Technology, AAS168
Stage Technology, CA168

TECHNOLOGY - GENERAL

Customer Energy Specialist, CA169
General Technology, AAS169

TRAVEL/TOURISM

Airline Operations, CC170
Tour Cruise Operations, CC170
Travel Agency Operations, CC171
Travel and Tourism, AB172

TRUCK DRIVER TRAINING

Truck Driver Training, CC173

KEY	
AB	Associate Degree Business
AAA	Associate Degree Applied Arts
AAS	Associate Degree Applied Science
CA	Certificate of Achievement
CC	Certificate of Completion

**ACCOUNTING
ASSOCIATE IN BUSINESS DEGREE**

Curriculum Code: 0162 (Effective Fall 2001–Summer 2006)

Graduates of this program are qualified to work as a paraprofessional in most areas of accounting, such as financial reporting, cost accounting, governmental accounting, tax preparation and auditing. Typically the paraprofessional works under the supervision of a professional accountant, but may be doing essentially the same types of work. Job titles include full-charge bookkeeper, tax preparer, and internal auditor, among others. **Not all courses in this program transfer to all colleges.** Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page B of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Business Careers Department, Old Central Building, Room 210, telephone number (517) 483-1522.

REQUIREMENTS		TOTAL: 31 CREDITS
CODE	TITLE	CREDIT HOURS
ACCG 210	Principles of Accounting I	4
ACCG 211	Principles of Accounting II	4
ACCG 220	Intermediate Accounting I	4
ACCG 221	Intermediate Accounting II	4
ACCG 230	Cost Accounting	4
ACCG 240	Federal Income Tax I	4
ACCG 260	Accounting Systems	4
LEGL 215	Busn Law I, Basic Principles	3

LIMITED CHOICE REQUIREMENTS TOTAL: 29–30 CREDITS
Complete the indicated number of credits from *each* CHOICE listed below.

CHOICE 1:	General Education Core Areas	12 Credits
	(See the <i>GENERAL EDUCATION</i> section above)	
	Writing Core Area	3
	Speech Communication Core Area	3
	Science/Technology Core Area	3
	Global Perspectives and Diversity Core Area	3
	Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)	

CHOICE 2:	Accounting Specialty Area	11–12 Credits
ACCG 160	Payroll Systems and Taxes	2
ACCG 231	Managerial Accounting	4
ACCG 235	Budgeting	2
ACCG 241	Federal Income Tax II	4
ACCG 250	Advanced Accounting	4
ACCG 280	Governmental Accounting	4
ACCG 290	Auditing	3

CHOICE 3:	Other Accounting & Business Related (See Note 1)	6 Credits
ACCG 245	Accounting Internship	2
ACCG 271	Principles of Finance	3
INSU 265	Principles Risk and Insurance	3
LEGL 219	Adv Busn Law for Acct Majors	4

MINIMUM TOTAL 60

NOTES:

- Students may also select from unchosen courses in Choice 2.
- For graduation from this program, a student must have earned a minimum 2.00 grade point average in courses with an ACCG prefix.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
ACCG 210	ACCG 211	ACCG 220	ACCG 221
LEGL 215	ACCG 260	ACCG 230	Lim.Ch.
Lim.Ch.	Lim.Ch.	ACCG 240	Lim.Ch.
Lim.Ch.	Lim.Ch.	Lim.Ch.	Lim.Ch.
	Lim.Ch.		Lim.Ch.

**ACCOUNTING
CERTIFICATE OF ACHIEVEMENT**

Curriculum Code: 0714 (Effective Fall 2001–Summer 2006)

Certificate holders qualify for clerical-level accounting positions that frequently include the need for general office skills in addition to accounting. Job titles include billing clerk, bookkeeper, payroll clerk, accounts receivable clerk, and accounts payable clerk. In smaller companies, a certificate holder may do all accounting tasks other than those handled by the company's CPA firm or other outside accountants.

REQUIREMENTS		TOTAL: 17 CREDITS
CODE	TITLE	CREDIT HOURS
ACCG 160	Payroll Systems and Taxes	2
ACCG 210	Principles of Accounting I	4
ACCG 211	Principles of Accounting II	4
ACCG 260	Accounting Systems	4
OADM 215	Records and Info Management I	3

LIMITED CHOICE REQUIREMENTS TOTAL: 11–15 CREDITS
Complete the indicated number of credits from *each* CHOICE listed below.

CHOICE 1:	Accounting Specialty	2–3 Credits
ACCG 140	Income Tax Preparation	3
ACCG 235	Budgeting	2

CHOICE 2:	Word Processing	4 Credits
CABS 113	Microsoft Word Office/Int Key	4
CABS 119	Word for Windows	2
CABS 121	WordPerfect for Windows	2
CABS 219	Advanced Microsoft Word	2

CHOICE 3:	Office Skills	2–4 Credits
OADM 195	Human Behavior in Work Place	3
OADM 203	Professional Office Procedures	2
OADM 220	Administrative Office Mgmt	4

CHOICE 4:	Written Communication	3–4 Credits
WRIT 121	Composition I	4
WRIT 127	Business Writing	3

ELECTIVES TOTAL: 2 CREDITS
Complete the indicated number of credits in courses of your choice.

MINIMUM TOTAL 30

SUGGESTED COURSE SEQUENCE

I	II
ACCG 210	ACCG 160
OADM 215	ACCG 211
Lim.Ch.	ACCG 260
Lim.Ch.	Lim.Ch.
Lim.Ch.	Lim.Ch.
	Elec.

STUDENTS ARE RESPONSIBLE FOR COMPLETING ALL REQUIREMENTS AS STATED. THE ONLY OFFICIAL DOCUMENTATION OF PROGRAM COMPLETION STATUS IS AN AUDIT CONDUCTED BY THE REGISTRAR'S OFFICE THAT IS INITIATED WHEN STUDENTS APPLY FOR A DEGREE OR CERTIFICATE. STUDENTS ARE EXPECTED TO APPLY ONE SEMESTER PRIOR TO THE SEMESTER THEY INTEND TO GRADUATE.

**ACCOUNTING, CPA EXAM PREP
ASSOCIATE IN BUSINESS DEGREE**
Curriculum Code: 0255 (Effective Fall 2001--Summer 2006)

This curriculum is intended for people with a bachelor's degree in another field who want to make a career change to accounting. The focus is on learning the material necessary to pass the exam to become a Certified Public Accountant (C.P.A.). Virtually all jobs in accounting and auditing are available to the C.P.A. The main job a C.P.A. is eligible to do that other accountants cannot is that of external auditor, which involves expressing an independent opinion on financial statements prepared by others. Some public accounting experience is required prior to certification in some states. The student is advised to review the requirements for certification as defined by the State Board of Accountancy. In addition, students should contact the Board of Accountancy, State of Michigan, Consumer and Industry Services to receive an authoritative list of requirements to sit for the C.P.A. exam.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Business Careers Department, Old Central Building, Room 210, telephone number (517) 483-1522.

REQUIREMENTS
TOTAL: 42 CREDITS

CODE	TITLE	CREDIT HOURS
ACCG 210	Principles of Accounting I	4
ACCG 211	Principles of Accounting II	4
ACCG 220	Intermediate Accounting I	4
ACCG 221	Intermediate Accounting II	4
ACCG 230	Cost Accounting	4
ACCG 240	Federal Income Tax I	4
ACCG 241	Federal Income Tax II	4
ACCG 260	Accounting Systems	4
ACCG 290	Auditing	3
LEGL 215	Busn Law I, Basic Principles	3
LEGL 219	Adv Busn Law for Acct Majors	4

LIMITED CHOICE REQUIREMENTS
TOTAL: 18-20 CREDITS

Complete the indicated number of credits from *each* CHOICE listed below.

CHOICE 1: General Education Core Areas (See Note 1) 12 Credits
(See the GENERAL EDUCATION section above)

Writing Core Area	3
Speech Communication Core Area	3
Science/Technology Core Area	3
Global Perspectives and Diversity Core Area	3
Mathematics Competency <i>(See page 23 for information on how to fulfill this requirement. Course work may be needed.)</i>	

CHOICE 2: Governmental/Fund Accounting 4 Credits

ACCG 250	Advanced Accounting	4
ACCG 280	Governmental Accounting	4

CHOICE 3: Accounting Related 2-4 Credits

ACCG 231	Managerial Accounting	4
ACCG 295	CPA Review - Tax, Mgr, Cost, Gov	1
ACCG 296	CPA Review - Business Law	1
ACCG 297	CPA Review - Auditing	1
ACCG 298	CPA Review - Fin Acct/Report	1
ECON 201	Principles of Economics-Micro	3

MINIMUM TOTAL 60
NOTE:

- Presenting evidence of an earned baccalaureate degree from an accredited college or university would fulfill all General Education Core requirements.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
ACCG 210	ACCG 211	ACCG 220	ACCG 221
LEGL 215	ACCG 260	ACCG 230	ACCG 241
Lim.Ch.	LEGL 219	ACCG 240	ACCG 290
Lim.Ch.	Lim.Ch.	Lim.Ch.	Lim.Ch.
			Lim.Ch.

STUDENTS ARE RESPONSIBLE FOR COMPLETING ALL REQUIREMENTS AS STATED. THE ONLY OFFICIAL DOCUMENTATION OF PROGRAM COMPLETION STATUS IS AN AUDIT CONDUCTED BY THE REGISTRAR'S OFFICE THAT IS INITIATED WHEN STUDENTS APPLY FOR A DEGREE OR CERTIFICATE. STUDENTS ARE EXPECTED TO APPLY ONE SEMESTER PRIOR TO THE SEMESTER THEY INTEND TO GRADUATE.

**MANAGERIAL ACCOUNTING
ASSOCIATE IN BUSINESS DEGREE**

Curriculum Code: 0247 (Effective Fall 2001–Summer 2006)

This program combines study in Accounting and Quality Assurance. Historically these skills lead to jobs in manufacturing. Today, however, service, merchandising, and governmental organizations are emphasizing cost and quality control. There should be an increasing demand for graduates of this program to assist management in budgeting, pricing, problem solving, statistical analysis, and controlling costs and quality. Job titles might be quality control auditor or cost accountant. **Not all courses in this program transfer to all colleges.** Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Business Careers Department, Old Central Building, Room 210, telephone number (517) 483-1522.

REQUIREMENTS TOTAL: 39 CREDITS

CODE	TITLE	CREDIT HOURS
ACCG 210	Principles of Accounting I	4
ACCG 211	Principles of Accounting II	4
ACCG 220	Intermediate Accounting I	4
ACCG 230	Cost Accounting	4
ACCG 231	Managerial Accounting	4
ACCG 260	Accounting Systems	4
QUAL 100	Intro Quality Assurance	4
QUAL 103	Probability/Stats Qual Assur	4
QUAL 121	Intro Statistical Process Cont	3
QUAL 203	Quality Systems Management	4

LIMITED CHOICE REQUIREMENTS TOTAL: 21 CREDITS

Complete the indicated number of credits from *each CHOICE* listed below.

CHOICE 1: General Education Core Areas 12 Credits
(See the *GENERAL EDUCATION* section above)

Writing Core Area	3
Speech Communication Core Area	3
Science/Technology Core Area	3
Global Perspectives and Diversity Core Area	3
Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)	

CHOICE 2: Accounting Related 9 Credits

ACCG 160	Payroll Systems and Taxes	2
ACCG 235	Budgeting	2
ACCG 240	Federal Income Tax I	4
ACCG 241	Federal Income Tax II	4
ACCG 280	Governmental Accounting	4
ACCG 290	Auditing	3

MINIMUM TOTAL 60

NOTE:

- For graduation from this program, a student must have earned a minimum 2.00 grade point average in courses with an ACCG prefix and QUAL prefix.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
ACCG 210	ACCG 211	ACCG 220	ACCG 231
QUAL 100	ACCG 260	ACCG 230	Lim.Ch.
QUAL 103	QUAL 121	QUAL 203	Lim.Ch.
Lim.Ch.	Lim.Ch.	Lim.Ch.	Lim.Ch.
	Lim.Ch.		

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**PRECISION AGRICULTURE
ASSOCIATE IN APPLIED SCIENCE DEGREE**

Curriculum Code: 0895 (Effective Fall 2001–Summer 2006)

This program prepares students for positions in site specific agricultural management, sustainable development, and related technological applications in today's agribusiness operations. Positions such as integrated pest management technologists, custom applicators, technology resource managers, crop advisory specialists, and dealer consultants are some of the newly-evolving careers in this exploding technology field. Emphasis on the geospatial computer technologies of Geographic Information Systems (GIS) and Global Positioning Systems (GPS) as well as remote sensing will be stressed. In addition, State Department of Agriculture pesticide re-certification credits are available upon successful completion of specific courses within this program. The National Science Foundation has selected this program as a national model curriculum. **Not all courses in this program transfer to all colleges.** Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Technology Careers Department, Gannon Vocational-Technical Center, Room 1380, telephone number (517) 483-1336.

REQUIREMENTS

TOTAL: 55 CREDITS

CODE	TITLE	CREDIT HOURS
AGRI 101	Principles/Precision Agritech	2
AGRI 106	Disease/Insect Agrinomic Crops	2
AGRI 200	Vegetation and Weed Management	3
AGRI 201	Prin/Sustainable Agriculture	3
AGRI 202	Agri Soils and Crop Management	3
AGRI 211	Agricultural Crop Production	3
AGRI 212	Vegetable Crop Production	3
AGRI 213	Ag Site Specific Research Tech	3
GRET 205	Principles Geographic Info Sys	3
GRET 210	Global Positioning Systems	3
GRET 240	Cartography in GIS	3
GRET 241	Remote Sens/AirPhoto Interpret	3
GRET 243	ORACLE/Geographic Info Sys	3
GRET 253	Basics of ARC/View	3
GRET 255	Beginning ARC/Info	3
GRET 258	Arc/View Extensions G.I.S.	3
HORT 102	Intro Ornamental Horticulture	3
LAND 282	Computer Draft/Dsgn Land Arch	3
WRIT 124	Technical Writing	3

LIMITED CHOICE REQUIREMENTS

TOTAL: 9 CREDITS

Complete the indicated number of credits from *each CHOICE* listed below.

CHOICE 1: General Education Core Areas	9 Credits
<i>(See the GENERAL EDUCATION section above)</i>	
Writing Core Area <i>(See Note 1)</i>	0
Speech Communication Core Area	3
Science/Technology Core Area	3
Global Perspectives and Diversity Core Area	3
Mathematics Competency <i>(See page 23 for information on how to fulfill this requirement. Course work may be needed.)</i>	
MINIMUM TOTAL	64

NOTE:

1. Students completing *REQUIREMENTS* have fulfilled the requirements for this Core area.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
AGRI 101	AGRI 106	AGRI 200	AGRI 201
GRET 205	AGRI 202	AGRI 211	AGRI 212
GRET 240	GRET 241	GRET 210	AGRI 213
HORT 102	GRET 253	GRET 243	GRET 255
LAND 282	WRIT 124	GRET 258	Lim.Ch.
Lim.Ch.	Lim.Ch.		

**PRECISION AGRICULTURE
CERTIFICATE OF ACHIEVEMENT**

Curriculum Code: 0852 (Effective Fall 2001–Summer 2006)

Students completing this certificate will be prepared for entry level positions in precision agriculture and sustainable development, and its various application areas in the agribusiness arena. Positions as pest scouts, custom applicators, technology resource technicians, and crop advisory specialists are a few of the positions available. This certificate provides basic computer skills as well as background and hands-on experience in GIS and GPS technologies.

REQUIREMENTS

TOTAL: 33 CREDITS

CODE	TITLE	CREDIT HOURS
AGRI 101	Principles/Precision Agritech	2
AGRI 106	Disease/Insect Agrinomic Crops	2
AGRI 200	Vegetation and Weed Management	3
AGRI 201	Prin/Sustainable Agriculture	3
AGRI 202	Agri Soils and Crop Management	3
GRET 205	Principles Geographic Info Sys	3
GRET 210	Global Positioning Systems	3
GRET 253	Basics of ARC/View	3
GRET 255	Beginning ARC/Info	3
HORT 102	Intro Ornamental Horticulture	3
LAND 100	Intro to Landscape Drafting	2
LAND 282	Computer Draft/Dagn Land Arch	3

MINIMUM TOTAL

33

SUGGESTED COURSE SEQUENCE

I	II
AGRI 101	AGRI 200
AGRI 106	AGRI 201
GRET 205	AGRI 202
GRET 253	GRET 210
HORT 102	GRET 255
LAND 100	
LAND 282	

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**ARCH TECH. RESIDENTIAL DESIGN
ASSOCIATE IN APPLIED SCIENCE DEGREE**

Curriculum Code: 0758 (Effective Fall 2001--Summer 2006)

This degree option will provide architectural students with the opportunity to study all aspects of single and multi-family residential design and construction. Areas of required study include residential design theory, preparation of residential working drawings, construction techniques, construction materials, residential landscaping, residential interiors, computer graphics, presentation techniques, structural design, and architectural history. Students will have the opportunity to take a cross-disciplinary array of technology courses, preparing for work in all segments of the residential design/build markets. **Not all courses in this program transfer to all colleges.** Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Architectural Studies Center, Gannon Vocational-Technical Center, Room 4600, telephone number (517) 483-1327.

REQUIREMENTS TOTAL: 26 CREDITS

CODE	TITLE	CREDIT HOURS
ARCH 101	Architectural Drafting I	4
ARCH 102	Architectural Drafting II	4
ARCH 121	Visual Communication I	3
ARCH 128	Residential Planning	2
ARCH 271	Structural Theory	4
BLDT 281	International Building Code	3
LAND 132	Residential Landscaping	2
MATH 121	College Algebra I	4

LIMITED CHOICE REQUIREMENTS TOTAL: 44-47 CREDITS

Complete the indicated number of credits from *each CHOICE* listed below.

CHOICE 1: General Education Core Areas 12 Credits

(See the *GENERAL EDUCATION* section above)

Writing Core Area	3
Speech Communication Core Area	3
Science/Technology Core Area	3
Global Perspectives and Diversity Core Area	3
Mathematics Competency (See Note 1)	

CHOICE 2: Computer Graphics 7-8 Credits

ARCH 221	Architectural DataCAD I	4
ARCH 222	Architectural DataCAD II	4
ARCH 225	Arch DataCAD Independent Study	1-4
ARCH 231	Architectural AutoCAD I	4
ARCH 232	Architectural AutoCAD II	4
ARCH 235	Arch AutoCAD Independent Study	1-4
ARCH 237	Arch Computer Rendering	3

CHOICE 3: Building Trades 7-8 Credits

BLDT 100	Introduction to Construction	3
BLDT 121	Residential Framing	4
BLDT 277	Construction Cost Estimating	4

CHOICE 4: Materials Structures and Systems 7-8 Credits

ARCH 273	Environmental Systems	4
ARCH 276	Alternative Structures	3
ARCH 278	Building Science	4
ARCH 283	Materials of Construction	4

CHOICE 5: History		3 Credits
ARCH 142	Architectural History II	3
ARCH 146	Preser/Adaptive Reuse Architect	3

CHOICE 6: Interior Design		4 Credits
INTR 151	Computer-Aided Kitchen Design	4
INTR 190	Interior/Materials/Equipment	4

CHOICE 7: Architectural Related (See Note 2)		4 Credits
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MINIMUM TOTAL 70

NOTES:

1. Students completing *REQUIREMENTS* have fulfilled the requirements for this Core area.
2. Allows completion of courses which relate to specific career preparation for the field of residential design and have not been applied in any of the above categories.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
ARCH 121	ARCH 101	ARCH 102	LAND 132
ARCH 128	BLDT 281	ARCH 271	Lim.Ch.
MATH 121	Lim.Ch.	Lim.Ch.	Lim.Ch.
Lim.Ch.	Lim.Ch.	Lim.Ch.	Lim.Ch.
Lim.Ch.	Lim.Ch.	Lim.Ch.	Lim.Ch.

STUDENTS ARE RESPONSIBLE FOR COMPLETING ALL REQUIREMENTS AS STATED. THE ONLY OFFICIAL DOCUMENTATION OF PROGRAM COMPLETION STATUS IS AN AUDIT CONDUCTED BY THE REGISTRAR'S OFFICE THAT IS INITIATED WHEN STUDENTS APPLY FOR A DEGREE OR CERTIFICATE. STUDENTS ARE EXPECTED TO APPLY ONE SEMESTER PRIOR TO THE SEMESTER THEY INTEND TO GRADUATE.

**ARCH TECH. RESIDENTIAL DESIGN
CERTIFICATE OF ACHIEVEMENT**

Curriculum Code: 0831 (Effective Fall 2001–Summer 2006)

This certificate program consists of practical hands-on courses that concentrate on single-family and multi-family residential design. This program provides students with the necessary technical knowledge for the design and preparation of residential working drawings, including: residential design theory, construction materials and techniques, residential interiors, presentation drawing techniques, and computer graphics.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

INFORMATION

Contact the Architectural Studies Center, Gannon Vocational Technical Center, Room 4600, telephone number (517) 483-1327.

REQUIREMENTS**TOTAL: 20 CREDITS**

CODE	TITLE	CREDIT HOURS
ARCH 101	Architectural Drafting I	4
ARCH 102	Architectural Drafting II	4
ARCH 121	Visual Communication I	3
ARCH 128	Residential Planning	2
ARCH 278	Building Science	4
BLDT 281	International Building Code	3

LIMITED CHOICE REQUIREMENTS**TOTAL: 21–22 CREDITS**

Complete the indicated number of credits from *each CHOICE* listed below.

CHOICE 1:	Computer Graphics	8 Credits
ARCH 221	Architectural DataCAD I	4
ARCH 222	Architectural DataCAD II	4
ARCH 231	Architectural AutoCAD I	4
ARCH 232	Architectural AutoCAD II	4
CHOICE 2:	Materials, Structures, and Systems	3–4 Credits
ARCH 271	Structural Theory	4
ARCH 273	Environmental Systems	4
ARCH 276	Alternative Structures	3
ARCH 283	Materials of Construction	4
CHOICE 3:	Interior Design	4 Credits
INTR 151	Computer-Aided Kitchen Design	4
INTR 190	Interior/Materials/Equipment	4
CHOICE 4:	Architectural Related (See Note 1)	6 Credits
MINIMUM TOTAL		41

NOTES:

- Choice 4 allows for completion of courses which relate to specific career preparation for the field of residential design and have not been applied in any of the above categories. Students should consult with a program advisor for specific course options.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III
ARCH 101	ARCH 102	Lim. Ch. 1
ARCH 121	ARCH 128	Lim. Ch. 3
BLDT 281	ARCH 278	Lim. Ch. 4
Lim. Ch. 2	Lim. Ch. 1	Lim. Ch. 4

STUDENTS ARE RESPONSIBLE FOR COMPLETING ALL REQUIREMENTS AS STATED. THE ONLY OFFICIAL DOCUMENTATION OF PROGRAM COMPLETION STATUS IS AN AUDIT CONDUCTED BY THE REGISTRAR'S OFFICE THAT IS INITIATED WHEN STUDENTS APPLY FOR A DEGREE OR CERTIFICATE. STUDENTS ARE EXPECTED TO APPLY ONE SEMESTER PRIOR TO THE SEMESTER THEY INTEND TO GRADUATE.

**ARCHITECTURAL TECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE DEGREE**

Curriculum Code: 0233 (Effective Fall 2001–Summer 2006)

The Architectural Studies Program offers students interested in the field of architecture three degree options. This degree option makes available a comprehensive program of study, involving all aspects of the contemporary architectural profession. Graduates of this comprehensive program are prepared to work as para-professionals in the offices of registered architects, engineers, interior designers, residential designers and builders, component suppliers and manufacturers, assisting those offices with the preparation of drawn documentation, design work, research, and field supervision. Students within this option area are also prepared to pursue a higher degree in architecture. **Not all courses in this program transfer to all colleges.** Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Architectural Studies Center, Gannon Vocational-Technical Center, Room 4600, telephone number (517) 483-1327.

REQUIREMENTS

TOTAL: 33 CREDITS

CODE	TITLE	CREDIT HOURS
ARCH 101	Architectural Drafting I	4
ARCH 102	Architectural Drafting II	4
ARCH 121	Visual Communication I	3
ARCH 201	Architectural Drafting III	4
ARCH 202	Architectural Drafting IV	4
ARCH 211	Design Studio I	3
ARCH 271	Structural Theory	4
BLDT 281	International Building Code	3
MATH 121	College Algebra I	4

LIMITED CHOICE REQUIREMENTS

TOTAL: 37-42 CREDITS

Complete the indicated number of credits from each CHOICE listed below.

CHOICE 1: General Education Core Areas 12 Credits

(See the GENERAL EDUCATION section above)

Writing Core Area	3
Speech Communication Core Area	3
Science/Technology Core Area	3
Global Perspectives and Diversity Core Area	3
Mathematics Competency (See Note 1)	

CHOICE 2: Computer Graphics 10-12 Credits

ARCH 221	Architectural DataCAD I	4
ARCH 222	Architectural DataCAD II	4
ARCH 225	Arch DataCAD Independent Study	1-4
ARCH 231	Architectural AutoCAD I	4
ARCH 232	Architectural AutoCAD II	4
ARCH 235	Arch AutoCAD Independent Study	1-4
ARCH 237	Arch Computer Rendering	3
ARCH 251	Architectural MicroStation I	4
ARCH 252	Architectural MicroStation II	4
ARCH 255	MicroStation Independent Study	1-4

CHOICE 3: Materials, Structures and Systems 7-8 Credits

ARCH 273	Environmental Systems	4
ARCH 276	Alternative Structures	3
ARCH 278	Building Science	4
ARCH 283	Materials of Construction	4
BLDT 277	Construction Cost Estimating	4

CHOICE 4: History and Preservation	6 Credits	
ARCH 141	Architectural History I	3
ARCH 142	Architectural History II	3
ARCH 146	Preser/Adaptive Reuse Architec	3

CHOICE 5: Architectural Related (See Note 2) 2-4 Credits

MINIMUM TOTAL

70

NOTES:

1. Students completing *REQUIREMENTS* have fulfilled the requirements for this Core area.
2. Allows completion of courses which relate to specific career preparation for the field of architecture and have not been applied in any of the above categories.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
ARCH 101	ARCH 102	ARCH 201	ARCH 202
ARCH 121	ARCH 211	ARCH 271	Lim.Ch.
MATH 121	BLDT 281	Lim.Ch.	Lim.Ch.
Lim.Ch.	Lim.Ch.	Lim.Ch.	Lim.Ch.
Lim.Ch.	Lim.Ch.	Lim.Ch.	Lim.Ch.
	Lim.Ch.		

STUDENTS ARE RESPONSIBLE FOR COMPLETING ALL REQUIREMENTS AS STATED. THE ONLY OFFICIAL DOCUMENTATION OF PROGRAM COMPLETION STATUS IS AN AUDIT CONDUCTED BY THE REGISTRAR'S OFFICE THAT IS INITIATED WHEN STUDENTS APPLY FOR A DEGREE OR CERTIFICATE. STUDENTS ARE EXPECTED TO APPLY ONE SEMESTER PRIOR TO THE SEMESTER THEY INTEND TO GRADUATE.

**COMPUTER GRAPHICS ANIMATION
ASSOCIATE IN APPLIED ARTS DEGREE**

Curriculum Code: 0284 (Effective Fall 2001–Summer 2006)

A computer animator is an artist who designs for video and film and uses a computer as a primary tool. Animators must have creative abilities and design, drawing, problem-solving, production, communication, and presentation skills. Computer animators are employed in advertising, video production, the motion picture industry (special effects to full cartoon features), and in the growing multimedia industry, creating games, training materials, and presentations. **Not all courses in this program transfer to all colleges.** Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Art, Design and Multimedia Program, Academic and Office Facility, Room 314, telephone number (517) 483-1476.

REQUIREMENTS

TOTAL: 58 CREDITS

CODE	TITLE	CREDIT HOURS
ARTS 102	2-Dimensional Design	3
ARTS 131	Drawing I	3
ARTS 132	Life Drawing	3
ARTS 133	Surface Anatomy	3
ARTS 151	Computer Graphics/Illustration	3
ARTS 162	Typography	3
ARTS 171	Computer Graphics/Photography	3
ARTS 216	Humorous Illustration I	3
ARTS 228	Advanced Digital Imaging	3
ARTS 231	Comp Graphics/Advanced Illustr	3
ARTS 232	Comp Graphics/2-D Animation	4
ARTS 233	Comp Graphics/2-D Interactive	4
ARTS 234	Comp Graphics/3-D Animation I	4
ARTS 235	Comp Graphics/3-D Animation II	4
ARTS 236	Computer Graphics/Production	3
ARTS 269	The Portfolio (See Note 1)	2
ARTS 281	Art Internship	3
FILM 118	Film Production I	4

LIMITED CHOICE REQUIREMENTS

TOTAL: 14-15 CREDITS

Complete the indicated number of credits from *each CHOICE* listed below.

CHOICE 1: General Education Core Areas 12 Credits
(See the *GENERAL EDUCATION* section above)

Writing Core Area	3
Speech Communication Core Area	3
Science/Technology Core Area	3
Global Perspectives and Diversity Core Area	3
Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)	

CHOICE 2: Topics in Design/Multimedia 2-3 Credits

ARTS 260	Topics in Design & Multimedia	2
ARTS 261	Topics in Design & Multimedia	3

MINIMUM TOTAL 72

NOTES:

- The Portfolio is considered to be the final course in this curriculum. All other courses must already be completed or be taken concurrently with ARTS 269.
- It is recommended that all students entering this curriculum have computer experience in both Windows NT and Macintosh Operating Systems. This experience may come from life or work experience, or other studies, as well as CABS 100 Seminars—Introduction to Windows NT and Introduction to the Macintosh. Students should consult with an advisor in the Art, Design and Multimedia Program if they are not sure about their computer skill level.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
ARTS 102	ARTS 132	ARTS 133	ARTS 231
ARTS 131	ARTS 151	ARTS 216	ARTS 232
FILM 118	ARTS 162	ARTS 228	ARTS 235
Lim.Ch.	ARTS 171	ARTS 234	Lim.Ch.
Lim.Ch.	Lim.Ch.	Lim.Ch.	

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ARTS 233
ARTS 236
ARTS 269
ARTS 281

STUDENTS ARE RESPONSIBLE FOR COMPLETING ALL REQUIREMENTS AS STATED. THE ONLY OFFICIAL DOCUMENTATION OF PROGRAM COMPLETION STATUS IS AN AUDIT CONDUCTED BY THE REGISTRAR'S OFFICE THAT IS INITIATED WHEN STUDENTS APPLY FOR A DEGREE OR CERTIFICATE. STUDENTS ARE EXPECTED TO APPLY ONE SEMESTER PRIOR TO THE SEMESTER THEY INTEND TO GRADUATE.

**COMPUTER GRAPHICS, MULTIMEDIA
ASSOCIATE IN APPLIED ARTS DEGREE**

Curriculum Code: 0194 (Effective Fall 2001–Summer 2006)

A multimedia designer is a computer artist who uses many electronic tools to create interactive art. Multimedia designers must have creative abilities and design, drawing, problem-solving, production, communication, and presentation skills. Multimedia is a cooperative process. The multimedia designer should expect to work as part of a team which may include animators, graphic designers, photographers, audio and video producers, writers and others. Employment can be with advertising agencies, on-line magazines and newspapers, in-house training in the public and private sector, and the education/ entertainment industry.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics. For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Art, Design and Multimedia Program, Academic and Office, Facility, Room 314, telephone number (517) 483-1476.

REQUIREMENTS

TOTAL: 51 CREDITS

CODE	TITLE	CREDIT HOURS
ARTS 131	Drawing I	3
ARTS 151	Computer Graphics/Illustration	3
ARTS 162	Typography	3
ARTS 171	Computer Graphics/Photography	3
ARTS 173	Computer Graphics/Web Design	2
ARTS 228	Advanced Digital Imaging	3
ARTS 232	Comp Graphics/2-D Animation	4
ARTS 233	Comp Graphics/2-D Interactive	4
ARTS 234	Comp Graphics/3-D Animation I	4
ARTS 235	Comp Graphics/3-D Animation II	4
ARTS 236	Computer Graphics/Production	3
ARTS 269	The Portfolio (See Note 1)	2
ARTS 281	Art Internship	3
CISB 102	Internet Literacy	3
CISB 200	Info Sys Tech/Problem Solving	3
FILM 118	Film Production I	4

LIMITED CHOICE REQUIREMENTS

TOTAL: 20–22 CREDITS

Complete the indicated number of credits from each CHOICE listed below.

CHOICE 1: General Education Core Areas 9 Credits
(See the GENERAL EDUCATION section above)

Writing Core Area	3
Speech Communication Core Area	3
Science/Technology Core Area (See Note 2)	0
Global Perspectives and Diversity Core Area	3
Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)	

CHOICE 2: Specialty (Choose one subchoice) 11–13 Credits

Subchoice 2A: Art Specialty

ARTS 102	2-Dimensional Design	3
ARTS 132	Life Drawing	3
ARTS 216	Humorous Illustration I	3
IMAG 101	Basic Photog for Non-Majors	2

Subchoice 2B: Photography Specialty

IMAG 111	Intro to Photographic Tech I	4
IMAG 112	Design for Imaging Tech	3
IMAG 113	Lighting Concepts/Applications	3
IMAG 114	Intro Photographic Color Tech	3

MINIMUM TOTAL 71

NOTES:

- The Portfolio is considered to be the final course in this curriculum. All other courses must already be completed or be taken concurrently with ARTS 269.
- Students completing REQUIREMENTS have fulfilled the requirements for this Core area.
- It is recommended that all students entering this curriculum have computer experience in both Windows NT and Macintosh Operating Systems. This experience may come from life or work experience, or other studies, as well as CABS 100 Seminars—Introduction to Windows NT and Introduction to the Macintosh. Students should consult with an advisor in the Arts, Design and Multimedia Program if they are not sure about their computer skill level.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

Subchoice 2A: Art Specialty

I	II	III	IV
ARTS 102	ARTS 132	ARTS 173	ARTS 228
ARTS 131	ARTS 151	ARTS 232	ARTS 233
CISB 102	ARTS 162	ARTS 234	ARTS 235
CISB 200	ARTS 171	IMAG 101	Lim.Ch.1
FILM 118	ARTS 216		Lim.Ch.1

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ARTS 236
ARTS 269
ARTS 281
Lim.Ch.1

Subchoice 2B: Photography Specialty

I	II	III	IV
ARTS 131	ARTS 151	ARTS 162	ARTS 228
CISB 102	ARTS 171	ARTS 173	ARTS 233
IMAG 111	CISB 200	ARTS 232	ARTS 235
IMAG 112	FILM 118	ARTS 234	Lim.Ch.1
IMAG 113	IMAG 114	Lim.Ch.1	

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ARTS 236
ARTS 269
ARTS 281
Lim.Ch.1

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**COMPUTER GRAPHICS, MULTIMEDIA
CERTIFICATE OF ACHIEVEMENT**

Curriculum Code: 0857 (Effective Fall 2001--Summer 2006)

This certificate of achievement is designed for students who hold a post secondary degree (A.A., B.A., B.F.A., or M.F.A.) in the visual arts and wish to acquire or enhance their computer graphics skills to prepare for employment in the animation and multimedia fields.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Class Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

INFORMATION

Contact the Art, Design and Multimedia Program, Academic and Office Facility, Room 314, telephone number (517) 483-1476.

REQUIREMENTS**TOTAL: 42 CREDITS**

CODE	TITLE	CREDIT HOURS
ARTS 151	Computer Graphics/Illustration (See Note 2)	3
ARTS 171	Computer Graphics/Photography (See Note 2)	3
ARTS 173	Computer Graphics/Web Design	2
ARTS 195	Employ/Buasn Issues for Artists	1
ARTS 228	Advanced Digital Imaging	3
ARTS 231	Comp Graphics/Advanced Illustr	3
ARTS 232	Comp Graphics/2-D Animation (See Note 2)	4
ARTS 233	Comp Graphics/2-D Interactive	4
ARTS 234	Comp Graphics/3-D Animation I	4
ARTS 235	Comp Graphics/3-D Animation II	4
ARTS 236	Computer Graphics/Production	3
ARTS 269	The Portfolio	2
ARTS 281	Art Internship	3
CISB 102	Internet Literacy	3
MINIMUM TOTAL		42

NOTES:

1. It is recommended that all students entering this curriculum have computer experience in both Windows NT and Macintosh Operating Systems. This experience may come from life or work experience, or other studies, as well as CABS 100 Seminars—Introduction to Windows NT and Introduction to the Macintosh. Students should consult with an advisor in the Art, Design and Multimedia Program if they are not sure about their computer skill level.
2. Students in this curriculum may be granted approval to waive the prerequisites for this course by contacting an advisor in the Art, Design and Multimedia Program.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
ARTS 151	ARTS 173	ARTS 231	ARTS 236
ARTS 171	ARTS 228	ARTS 233	ARTS 269
ARTS 195	ARTS 232	ARTS 235	ARTS 281
CISB 102	ARTS 234		

STUDENTS ARE RESPONSIBLE FOR COMPLETING ALL REQUIREMENTS AS STATED. THE ONLY OFFICIAL DOCUMENTATION OF PROGRAM COMPLETION STATUS IS AN AUDIT CONDUCTED BY THE REGISTRAR'S OFFICE THAT IS INITIATED WHEN STUDENTS APPLY FOR A DEGREE OR CERTIFICATE. STUDENTS ARE EXPECTED TO APPLY ONE SEMESTER PRIOR TO THE SEMESTER THEY INTEND TO GRADUATE.

**COMPUTER GRAPHICS, WEB DESIGN
ASSOCIATE IN APPLIED ARTS DEGREE**

Curriculum Code: 0914 (Effective Fall 2001–Summer 2006)

A Web designer combines type, graphics, animation, sound, and programming to create a complete experience for the Web visitor. The Web designer should have a basic fluency in all aspects of site development and must learn to balance content and quality concerns with those of e-commerce. The Web designer can write code and create graphics, develop and organize content, build the structure of the site, and assist with interface issues. Web design is a cooperative process, and the designer may work with interface designers, marketing professionals, engineers, and computer technicians. **Not all courses in this program transfer to all colleges.** Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Art, Design and Multimedia Program, Academic and Office Facility, Room 314, telephone number (517) 483-1476.

REQUIREMENTS

TOTAL: 61 CREDITS

CODE	TITLE	CREDIT HOURS
ARTS 102	2-Dimensional Design	3
ARTS 131	Drawing I	3
ARTS 132	Life Drawing	3
ARTS 151	Computer Graphics/Illustration	3
ARTS 171	Computer Graphics/Photography	3
ARTS 173	Computer Graphics/Web Design	2
ARTS 216	Humorous Illustration I	3
ARTS 228	Advanced Digital Imaging	3
ARTS 232	Comp Graphics/2-D Animation	4
ARTS 233	Comp Graphics/2-D Interactive	4
ARTS 236	Computer Graphics/Production	3
ARTS 269	The Portfolio (See Note 2)	2
ARTS 281	Art Internship	3
CISB 102	Internet Literacy	3
CISB 119	Intro Window Prog Visual BASIC	4
CISB 136	SQL: Structured Query Language	2
CISB 200	Info Sys Tech/Problem Solving	3
CISB 203	Developing Pages for the Web	3
CISB 204	Commercial Internet Site Mgmt	3
CISB 253	WWW Interactive Programming	4

LIMITED CHOICE REQUIREMENTS

TOTAL: 9 CREDITS

Complete the indicated number of credits from *each CHOICE* listed below.

CHOICE 1: General Education Core Areas 9 Credits

(See the *GENERAL EDUCATION* section above)

Writing Core Area	3
Speech Communication Core Area	3
Science/Technology Core Area (See Note 3)	0
Global Perspectives and Diversity Core Area	3
Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)	

MINIMUM TOTAL 70

NOTES:

1. It is recommended that all students entering this curriculum have computer experience in both Windows NT and Macintosh Operating Systems. This experience may come from life or work experience, or other studies, as well as CABS 100 Seminars—Introduction to the Macintosh and Introduction to Windows NT. Students should make an appointment with a Program Advisor in the Art, Design and Multimedia Program if they are not sure about their computer skill level.
2. The Portfolio is considered to be the final course in this curriculum. All courses must be completed or be taken concurrently with ARTS 269.
3. Students completing *REQUIREMENTS* have fulfilled the requirements for this Core area.
4. The LCC Computer Graphics Advisory Committee recommends that students in this curriculum also take MKTG 140—Introduction to Advertising or MKTG 210—Marketing for the Internet.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
ARTS 102	ARTS 132	ARTS 173	ARTS 228
ARTS 131	ARTS 151	ARTS 232	ARTS 233
CISB 102	ARTS 171	CISB 136	CISB 204
CISB 119	ARTS 216	CISB 203	CISB 253
CISB 200		Lim.Ch.	
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ARTS 236			
ARTS 269			
ARTS 281			
Lim.Ch.			
Lim.Ch.			

STUDENTS ARE RESPONSIBLE FOR COMPLETING ALL REQUIREMENTS AS STATED. THE ONLY OFFICIAL DOCUMENTATION OF PROGRAM COMPLETION STATUS IS AN AUDIT CONDUCTED BY THE REGISTRAR'S OFFICE THAT IS INITIATED WHEN STUDENTS APPLY FOR A DEGREE OR CERTIFICATE. STUDENTS ARE EXPECTED TO APPLY ONE SEMESTER PRIOR TO THE SEMESTER THEY INTEND TO GRADUATE.

**FIGURE STUDIES
CERTIFICATE OF ACHIEVEMENT**

Curriculum Code: 0850 (Effective Fall 2001–Summer 2006)

This certificate of achievement is designed for artists who want to concentrate on the human figure as a subject matter in their artwork. Certificate holders may improve their opportunities for advancement in this or a related area. Additional education enhances an individual's employment opportunities.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Class Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

INFORMATION

Contact the Art, Design and Multimedia Program, Academic and Office Facility, Room 314, telephone number (517) 483-1476.

REQUIREMENTS

TOTAL: 34 CREDITS

CODE	TITLE	CREDIT HOURS
ARTS 102	2-Dimensional Design	3
ARTS 131	Drawing I	3
ARTS 132	Life Drawing (See Note 1)	3
ARTS 133	Surface Anatomy for Artists	3
ARTS 136	Figure Sculpture	4
ARTS 203	Figure Painting (See Note 2)	4
ARTS 276	Art Independent Study	3
HUMS 211	History of Art I	4
HUMS 212	History of Art II	4

LIMITED CHOICE REQUIREMENTS

TOTAL: 7-8 CREDITS

Complete the indicated number of credits from each CHOICE listed below.

CHOICE 1:	Art	7-8 Credits
ARTS 140	Printmaking I	4
ARTS 141	Printmaking II	4
ARTS 145	Screen Printing I	4
ARTS 146	Screen Printing II	4
ARTS 151	Computer Graphics/Illustration	3
ARTS 204	Watercolor I	4
ARTS 205	Watercolor II	4
ARTS 206	Advanced Watercolor	4
ARTS 216	Humorous Illustration I	3

MINIMUM TOTAL

41

NOTES:

- ARTS 132 must be taken twice for a total of 6 credits.
- ARTS 203 must be taken once toward the requirements for this certificate, and may also be taken up to two additional times toward Choice 1 requirements for a total of 12 credits.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III
ARTS 102	ARTS 132	ARTS 136
ARTS 131	ARTS 132	ARTS 203
HUMS 211	ARTS 133	ARTS 276
Lim.Ch.	HUMS 212	Lim.Ch.
	Lim.Ch.	

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**FINE ART FOUNDATION
ASSOCIATE IN APPLIED ARTS DEGREE**

Curriculum Code: 0271 (Effective Fall 2001–Summer 2006)

This curriculum is designed for artists who wish to expand their creative horizons or refine their artistic style. The emphasis is on the exploration of an artist's abilities through the use of traditional materials and techniques. Painting, drawing, printmaking, and watercolor are fine arts. A career in fine arts requires dedication, discipline, and sacrifice. Success can come slowly in this visual art, and most artists do their best work after years of experience. Fine artists are self-employed professionals who sell their work through artist's representatives, galleries, art fairs, and juried exhibitions. **Not all courses in this program transfer to all colleges.** Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Art, Design and Multimedia Program, Academic and Office Facility, Room 314, telephone number (517) 483-1476.

REQUIREMENTS TOTAL: 44 CREDITS

CODE	TITLE	CREDIT HOURS
ARTS 102	2-Dimensional Design	3
ARTS 103	3-Dimensional Design	3
ARTS 131	Drawing I	3
ARTS 132	Life Drawing (See Note 1)	3
ARTS 133	Surface Anatomy for Artists	3
ARTS 136	Figure Sculpture	4
ARTS 140	Printmaking I	4
ARTS 145	Screen Printing I	4
ARTS 190	Matting and Framing Techniques	1
ARTS 200	Painting I	4
ARTS 204	Watercolor I	4
HUMS 211	History of Art I	4
HUMS 212	History of Art II	4

LIMITED CHOICE REQUIREMENTS TOTAL: 26 CREDITS

Complete the indicated number of credits from each CHOICE listed below.

CHOICE 1: General Education Core Areas 9 Credits
(See the GENERAL EDUCATION section above)

Writing Core Area	3
Speech Communication Core Area	3
Science/Technology Core Area	3
Global Perspectives and Diversity Core Area (See Note 2)	0
Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)	

CHOICE 2: Art 17 Credits

ARTS 132	Life Drawing	3
ARTS 137	Perspective Drawing	2
ARTS 141	Printmaking II	4
ARTS 146	Screen Printing II	4
ARTS 151	Computer Graphics/Illustration	3
ARTS 171	Computer Graphics/Photography	3
ARTS 195	Employ/Busn Issues for Artists	1
ARTS 201	Painting II	4
ARTS 203	Figure Painting	4
ARTS 205	Watercolor II	4
ARTS 206	Advanced Watercolor	4
ARTS 221	Airbrush Techniques I	3

MINIMUM TOTAL 70

NOTES:

- ARTS 132 must be taken once toward the requirements for this degree and may also be taken one more time toward Choice 2 requirements for a total of 6 credits.
- Students completing REQUIREMENTS have fulfilled the requirements for this Core area.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
ARTS 102	ARTS 103	ARTS 136	ARTS 190
ARTS 131	ARTS 132	ARTS 204	Lim.Ch.1
ARTS 140	ARTS 133	HUMS 212	Lim.Ch.2
ARTS 145	ARTS 200	Lim.Ch.1	Lim.Ch.2
Lim.Ch.1	HUMS 211	Lim.Ch.2	
v			
	Lim.Ch.2		
	Lim.Ch.2		
	Lim.Ch.2		
	Lim.Ch.2		

STUDENTS ARE RESPONSIBLE FOR COMPLETING ALL REQUIREMENTS AS STATED. THE ONLY OFFICIAL DOCUMENTATION OF PROGRAM COMPLETION STATUS IS AN AUDIT CONDUCTED BY THE REGISTRAR'S OFFICE THAT IS INITIATED WHEN STUDENTS APPLY FOR A DEGREE OR CERTIFICATE. STUDENTS ARE EXPECTED TO APPLY ONE SEMESTER PRIOR TO THE SEMESTER THEY INTEND TO GRADUATE.

**GRAPHIC DESIGN
ASSOCIATE IN APPLIED ARTS DEGREE**

Curriculum Code: 0219 (Effective Fall 2001–Summer 2006)

A graphic designer is an artist who creatively and effectively designs informational or promotional materials for publication and/or use in a variety of mass media situations. Artistic skills related to producing effective visual information are essential for a graphic designer. An understanding of the principles of typography, color theory, computer graphic applications, and pre-press techniques is necessary. Graphic designers are employed by design studios, advertising agencies, printing companies, publishers, newspapers, sign companies, and businesses that generate their own publications. **Not all courses in this program transfer to all colleges.** Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Art, Design and Multimedia Program, Academic and Office Facility, Room 314, telephone number (517) 483-1476.

REQUIREMENTS

TOTAL: 57 CREDITS

CODE	TITLE	CREDIT HOURS
ARTS 102	2-Dimensional Design	3
ARTS 131	Drawing I	3
ARTS 132	Life Drawing	3
ARTS 162	Typography	3
ARTS 171	Computer Graphics/Photography	3
ARTS 175	Electronic Design	3
ARTS 195	Employ/Busn Issues for Artists	1
ARTS 228	Advanced Digital Imaging	3
ARTS 251	Graphic Design I	4
ARTS 252	Graphic Design II	4
ARTS 253	Graphic Design III	4
ARTS 257	Computer Prepress Prod Tech	4
ARTS 269	The Portfolio	2
ARTS 281	Art Internship	3
ARWS 133	Introduction to Adobe InDesign	1
CABS 195	Microsoft Windows	2
HUMS 211	History of Art I	4
HUMS 212	History of Art II	4
MKTG 140	Introduction to Advertising	3

LIMITED CHOICE REQUIREMENTS

TOTAL: 11–12 CREDITS

Complete the indicated number of credits from *each CHOICE* listed below.

CHOICE	REQUIREMENTS	CREDITS	
CHOICE 1:	General Education Core Areas	9 Credits	
	(See the <i>GENERAL EDUCATION</i> section above)		
	Writing Core Area	3	
	Speech Communication Core Area	3	
	Science/Technology Core Area	3	
	Global Perspectives and Diversity Core Area (See Note 1)	0	
	Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)		
CHOICE 2:	Illustration	2–3 Credits	
	ARTS 213	Illustration Fundamentals	3
	ARTS 231	Comp Graphics/Advanced Illustr	3
	ARTS 260	Topics in Design & Multimedia	2
	ARTS 261	Topics in Design & Multimedia	3
MINIMUM TOTAL		68	

NOTE:

1. Students completing *REQUIREMENTS* have fulfilled the requirements for this Core area.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
ARTS 102	ARTS 132	ARTS 171	ARTS 228
ARTS 131	ARTS 175	ARTS 252	ARTS 253
ARTS 162	ARTS 251	ARWS 133	ARTS 257
HUMS 211	HUMS 212	CABS 195	ARTS 281
Lim.Ch.1		MKTG 140	Lim.Ch.2

V
ARTS 195
ARTS 269
Lim.Ch.1
Lim.Ch.1

**HUMOROUS ILLUSTRATION
CERTIFICATE OF COMPLETION**

Curriculum Code: 0838 (Effective Fall 2001–Summer 2006)

This certificate of completion program consists of practical hands-on courses that provide students with the necessary technical knowledge and skills needed to create humorous illustrations, cartooning, and caricatures. Additional education enhances an individual's employment opportunities.

REQUIREMENTS

TOTAL: 17 CREDITS

CODE	TITLE	CREDIT HOURS
ARTS 102	2-Dimensional Design	3
ARTS 131	Drawing I	3
ARTS 132	Life Drawing	3
ARTS 137	Perspective Drawing	2
ARTS 216	Humorous Illustration I	3
ARTS 217	Humorous Illustration II	3

MINIMUM TOTAL

17

SUGGESTED COURSE SEQUENCE

I	II
ARTS 102	ARTS 132
ARTS 131	ARTS 137
ARTS 216	ARTS 217

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**ALTERNATE FUELS
CERTIFICATE OF COMPLETION**

Curriculum Code: 0855 (Effective Fall 2001–Summer 2006)

This certificate program is intended for individuals who are currently employed in the automotive repair industry. Students are trained specifically in the area of alternative fuels and are prepared to take the State of Michigan Mechanics Certification Tests to become automotive technicians through the Secretary of State. State certification tests are available at any Michigan Secretary of State Office.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Class Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

INFORMATION

Contact the Technology Careers Department, Gannon Vocational-Technical Center, Room 1380, telephone number (517) 483-1336.

REQUIREMENTS

TOTAL: 18 CREDITS

CODE	TITLE	CREDIT HOURS
AUTO 100	Auto Service I	3
AUTO 215	Engine Performance/Tune-Up	5
AUTO 225	Automotive Computers	5
AUTO 260	Intro to Alternative Fuels	2
AUTO 261	Alternative Fuels—CNG	3
MINIMUM TOTAL		18

NOTE:

- Prerequisites to courses may be waived based on experience. See a program advisor prior to registration for more information.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III
AUTO 100	AUTO 225	AUTO 261
AUTO 215	AUTO 260	

**AUTO AC/ELECTRICAL ACCESSORIES
CERTIFICATE OF COMPLETION**

Curriculum Code: 0846 (Effective Fall 2001–Summer 2006)

This certificate program is intended for individuals who are currently employed in the automotive repair industry. Students are prepared to take the State of Michigan Mechanics Certification Tests to become licensed automotive technicians through the Secretary of State. State certification tests are available at any Michigan Secretary of State Office.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Class Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

INFORMATION

Contact the Technology Careers Department, Gannon Vocational-Technical Center, Room 1380, telephone number (517) 483-1336.

REQUIREMENTS

TOTAL: 11 CREDITS

CODE	TITLE	CREDIT HOURS
AUTO 100	Auto Service I	3
AUTO 110	Auto Electrical Theory	5
AUTO 160	Auto Heat & Air Conditioning	3
MINIMUM TOTAL		11

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II
AUTO 100	AUTO 160
AUTO 110	

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**AUTO BODY REPAIR
ASSOCIATE IN APPLIED SCIENCE DEGREE**

Curriculum Code: 0188 (Effective Fall 2001–Summer 2006)

Auto body repair technicians possess the necessary skills to perform collision repair and refinishing according to the "manufacturer's specifications." Using hand and power tools, they straighten bent frames and body sections, replace badly damaged parts, smooth out minor dents and creases, remove rust, fill small holes and renew painted surfaces. Auto body repair technicians are employed by collision repair shops, new car dealerships, refinishing businesses and auto restoration shops. Formal training is highly desirable, because advances in technology in recent years have greatly changed the structure, the components and even the materials used in automobiles. This program does not provide state certification. State certification tests are available at any Michigan Secretary of State Office.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Technology Careers Department, Gannon Vocational-Technical Center, Room 1380, telephone number (517) 483-1336.

REQUIREMENTS

TOTAL: 54 CREDITS

CODE	TITLE	CREDIT HOURS
AUTO 100	Auto Service I	3
AUTO 110	Auto Electrical Theory	5
AUTO 141	Non-Structural Repair (See Note 1)	3
AUTO 142	Advanced Non-Structural Repair	5
AUTO 143	Auto Body Welding and Cutting (See Note 1)	5
AUTO 144	Auto Body Structural Repair	5
AUTO 145	Introduction to Refinishing (See Note 1)	5
AUTO 146	Advanced Refinishing	5
AUTO 147	Collision Repair Estimating	3
AUTO 148	Automotive Plastic Repair	3
AUTO 150	Auto Steering & Suspension	3
AUTO 160	Auto Heat & Air Conditioning	3
AUTO 285	Automotive Internship (See Note 1)	6

LIMITED CHOICE REQUIREMENTS

TOTAL: 16–17 CREDITS

Complete the indicated number of credits from each **CHOICE** listed below:

CHOICE 1: General Education Core Areas 12 Credits

(See the *GENERAL EDUCATION* section above)

Writing Core Area	3
Speech Communication Core Area	3
Science/Technology Core Area	3
Global Perspectives and Diversity Core Area	3
Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)	

CHOICE 2: Automotive Related 4–5 Credits

AUTO 188 Auto Body Repair and Painting	4
AUTO 215 Engine Performance/Tune-Up	5
AUTO 225 Automotive Computers	5

MINIMUM TOTAL 70

NOTE:

- Students must obtain department approval from the Technology Careers Department prior to registering for these courses.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
AUTO 100	AUTO 110	AUTO 144	AUTO 147
AUTO 141	AUTO 142	AUTO 146	AUTO 148
AUTO 143	Lim.Ch.	AUTO 160	AUTO 150
AUTO 145	Lim.Ch.	Lim.Ch.	AUTO 285
		Lim.Ch.	Lim.Ch.

**AUTO BODY REPAIR
CERTIFICATE OF ACHIEVEMENT**

Curriculum Code: 0166 (Effective Fall 2001–Summer 2006)

This program provides the technical knowledge and skills needed to perform collision repair and refinishing. Students will be prepared for an entry level position. This program does not provide state certification. State certification tests are available at any Michigan Secretary of State Office.

REQUIREMENTS

TOTAL: 35 CREDITS

CODE	TITLE	CREDIT HOURS
AUTO 100	Auto Service I	3
AUTO 141	Non-Structural Repair (See Note 1)	3
AUTO 142	Advanced Non-Structural Repair	5
AUTO 143	Auto Body Welding and Cutting (See Note 1)	5
AUTO 144	Auto Body Structural Repair	5
AUTO 145	Introduction to Refinishing (See Note 1)	5
AUTO 146	Advanced Refinishing	5
MATH 050	Math-Principles and Practices	4

MINIMUM TOTAL 35

NOTE:

- Students must obtain department approval from the Technology Careers Department prior to registering for these courses.

SUGGESTED COURSE SEQUENCE

I	II
AUTO 100	AUTO 142
AUTO 141	AUTO 144
AUTO 143	AUTO 146
AUTO 145	MATH 050

**AUTO STEER/SUSPENSION/BRAKES
CERTIFICATE OF COMPLETION**

Curriculum Code: 0851 (Effective Fall 2001–Summer 2006)

This certificate program is intended for individuals who are currently employed in the automotive repair industry. Students are prepared to take the State of Michigan Mechanics Certification Tests and become licensed automotive technicians through the Secretary of State. State certification tests are available at any Michigan Secretary of State Office.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Class Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

INFORMATION

Contact the Technology Careers Department, Gannon Vocational-Technical Center, Room 1380, telephone number (517) 483-1336.

REQUIREMENTS		TOTAL: 12 CREDITS
CODE	TITLE	CREDIT HOURS
AUTO 100	Auto Service I	3
AUTO 140	Automotive Brakes	3
AUTO 150	Auto Steering & Suspension	3
AUTO 235	Advanced Computer/ABS Brake System	3
MINIMUM TOTAL		12

NOTE:

- Prerequisites to courses may be waived based on experience. See a program advisor prior to registration for more information.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II
AUTO 100	AUTO 235
AUTO 140	
AUTO 150	

**AUTOMOTIVE DRIVE LINES
CERTIFICATE OF COMPLETION**

Curriculum Code: 0856 (Effective Fall 2001–Summer 2006)

This certificate program is intended for individuals who are currently employed in the automotive repair industry. Students are prepared to take the State of Michigan Mechanics Certification Tests to become licensed automotive technicians through the Secretary of State. State certification tests are available at any Michigan Secretary of State Office.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Class Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

INFORMATION

Contact the Technology Careers Department, Gannon Vocational-Technical Center, Room 1380, telephone number (517) 483-1336.

REQUIREMENTS		TOTAL: 17 CREDITS
CODE	TITLE	CREDIT HOURS
AUTO 100	Auto Service I	3
AUTO 120	Auto Drive Train	3
AUTO 121	Automatic Transmissions I	5
AUTO 122	Automatic Transmissions II	3
AUTO 130	Automotive Engines	3
MINIMUM TOTAL		17

NOTE:

- Prerequisites to courses may be waived based on experience. See a program advisor prior to registration for more information.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I
AUTO 100
AUTO 120
AUTO 121
AUTO 122
AUTO 130

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**AUTOMOTIVE TECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE DEGREE**

Curriculum Code: 0238 (Effective Fall 2001–Summer 2006)

This Program prepares individuals to work in the automotive field as a technician. Students learn all aspects of automobile repair, diagnosis and maintenance. This program prepares the individual to take the State of Michigan Mechanics Certification Tests and become licensed automotive technicians through the Secretary of State. State certification tests are available at any Michigan Secretary of State Office.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics. For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Technology Careers Department, Gannon Vocational-Technical Center, Room 1380, telephone number (517) 483-1336.

REQUIREMENTS		TOTAL: 47 CREDITS
CODE	TITLE	CREDIT HOURS
AUTO 100	Auto Service I	3
AUTO 110	Auto Electrical Theory	5
AUTO 120	Auto Drive Train	3
AUTO 121	Automatic Transmissions I	5
AUTO 122	Automatic Transmissions II	3
AUTO 130	Automotive Engines	3
AUTO 140	Automotive Brakes	3
AUTO 150	Auto Steering & Suspension	3
AUTO 160	Auto Heat & Air Conditioning	3
AUTO 215	Engine Performance/Tune-Up	5
AUTO 225	Automotive Computers	5
AUTO 235	Adv Computer/ABS Brake System	3
WRIT 124	Technical Writing	3

LIMITED CHOICE REQUIREMENTS TOTAL: 18 CREDITS
Complete the indicated number of credits from each CHOICE listed below:

CHOICE 1: General Education Core Areas	9 Credits
<i>(See the GENERAL EDUCATION section above)</i>	
Writing Core Area (See Note 1)	0
Speech Communication Core Area	3
Science/Technology Core Area	3
Global Perspectives and Diversity Core Area	3
Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)	
CHOICE 2: Automotive Related	9 Credits
AUTO 133 Small Engine Repair	3
AUTO 141 Non-Structural Repair (See Note 2)	3
AUTO 145 Introduction to Refinishing (See Note 2)	5
AUTO 280 Automotive Service Laboratory	6
AUTO 285 Automotive Internship	6
MACH 105 Machine Tool Survey	3
MACH 135 Metallurgy and Heat Treat	4
MINIMUM TOTAL	65

NOTE:

- Students completing *REQUIREMENTS* have fulfilled the requirements for this Core area.
- Students must obtain department approval from the Technology Careers Department prior to registering for these courses.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
AUTO 100	AUTO 121	AUTO 120	AUTO 235
AUTO 110	AUTO 160	AUTO 122	Lim.Ch.
AUTO 130	AUTO 215	AUTO 150	Lim.Ch.
AUTO 140	Lim.Ch.	AUTO 225	Lim.Ch.
WRIT 124	Lim.Ch.	Lim.Ch.	

**AUTOMOTIVE TECHNOLOGY
CERTIFICATE OF ACHIEVEMENT**

Curriculum Code: 0140 (Effective Fall 2001–Summer 2006)

This certificate program prepares individuals to take the State of Michigan Mechanics Certification Tests to become licensed automotive technicians through the Secretary of State. State certification tests are available at any Michigan Secretary of State Office.

REQUIREMENTS

TOTAL: 40 CREDITS

CODE	TITLE	CREDIT HOURS
AUTO 100	Auto Service I	3
AUTO 110	Auto Electrical Theory	5
AUTO 130	Automotive Engines	3
AUTO 140	Automotive Brakes	3
AUTO 150	Auto Steering & Suspension	3
AUTO 160	Auto Heat & Air Conditioning	3
AUTO 215	Engine Performance/Tune-Up	5
AUTO 225	Automotive Computers	5
AUTO 280	Automotive Service Laboratory	6
MATH 050	Math-Principles and Practices	4

MINIMUM TOTAL

40

SUGGESTED COURSE SEQUENCE

I	II	III
AUTO 100	AUTO 140	AUTO 225
AUTO 110	AUTO 150	AUTO 280
AUTO 130	AUTO 160	
MATH 050	AUTO 215	

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**ENGINE PERFORMANCE/DIAGNOSIS
CERTIFICATE OF COMPLETION**

Curriculum Code: 0848 (Effective Fall 2001–Summer 2006)

This certificate program is intended for individuals who are currently employed in the automotive repair industry. Students are prepared to take the State of Michigan Mechanics Certification Tests to become licensed automotive technicians through the Secretary of State. State certification tests are available at any Michigan Secretary of State Office.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Class Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

INFORMATION

Contact the Technology Careers Department, Gannon Vocational-Technical Center, Room 1380, telephone number (517) 483-1336.

REQUIREMENTS

TOTAL: 21 CREDITS

CODE	TITLE	CREDIT HOURS
AUTO 100	Auto Service I	3
AUTO 110	Auto Electrical Theory	5
AUTO 215	Engine Performance/Tune-Up	5
AUTO 225	Automotive Computers	5
AUTO 235	Adv Computer/ABS Brake Systems	3

MINIMUM TOTAL 21

NOTE:

1. Prerequisites to courses may be waived based on experience. See a program advisor prior to registration for more information.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II
AUTO 100	AUTO 225
AUTO 110	AUTO 235
AUTO 215	

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**AIRFRAME MAINTENANCE TECH
ASSOCIATE IN APPLIED SCIENCE DEGREE**

Curriculum Code: 0757 (Effective Fall 2001–Summer 2006)

Airframe maintenance technicians maintain aircraft in accordance with Federal Aviation Regulations. Airframe technicians perform a wide variety of repairs and alterations to sheet metal and composite aircraft structures. In addition, they inspect and repair or replace complex aircraft components associated with hydraulic/pneumatic, communication/navigation, fuel and flight control systems. Aviation maintenance technicians are employed throughout the world maintaining aircraft for major air carriers, commuter airlines, air freight operators, corporate flight departments, fixed base operators and a variety of other specialized aviation businesses. **Not all courses in this program transfer to all colleges.** Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Aviation Program at the LCC Aviation Center, telephone number (517) 483-1406.

REQUIREMENTS

TOTAL: 54 CREDITS

CODE	TITLE	CREDIT HOURS
AVAF 125	Aircraft Systems I	2
AVAF 126	Aircraft Systems II	6
AVAF 127	Aircraft Systems III	3
AVAF 134	Aircraft Instruments	2
AVAF 208	Aircraft Structures I	4
AVAF 209	Aircraft Structures II	4
AVAF 210	Aircraft Structures III	3
AVAF 211	Aircraft Electrical I	4
AVAF 212	Aircraft Electrical II	4
AVAF 246	National Airframe Cert Proced	1
AVGM 111	Aviation General I	4
AVGM 112	Aviation General II	6
AVGM 113	Aviation General III	4
AVGM 114	Material and Processes	5
WELD 210	Aircraft Welding	2

LIMITED CHOICE REQUIREMENTS

TOTAL: 12 CREDITS

Complete the indicated number of credits from each CHOICE listed below.

CHOICE 1: General Education Core Areas 12 Credits

(See the *GENERAL EDUCATION* section above)

Writing Core Area	3
Speech Communication Core Area	3
Science/Technology Core Area	3
Global Perspectives and Diversity Core Area	3
Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)	

MINIMUM TOTAL 66

NOTE:

- Students must complete each course with a minimum grade of 71 percent and pass Pre-Tests for General and Airframe with a minimum grade of 80 percent to be approved for the Federal Aviation Administration written tests.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
AVGM 111	AVAF 125	AVAF 127	Lim.Ch.
AVGM 112	AVAF 126	AVAF 134	Lim.Ch.
AVGM 113	AVAF 208	AVAF 209	Lim.Ch.
AVGM 114	AVAF 211	AVAF 210	Lim.Ch.
	WELD 210	AVAF 212	
		AVAF 246	

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**AVIATION FLIGHT TECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE DEGREE**

Curriculum Code: 0259 (Effective Fall 2001–Summer 2006)

The commercial flight training program provides all required ground, simulator, and in-flight technical training to meet Federal Aviation Administration requirements for Commercial Pilot Certification. This program will conduct ab-initio training (no previous experience) or build on previous experience of the student. Students entering this program are required to accomplish an F.A.A. Class II medical exam prior to entering training. Normal motor skills and academic ability will provide functional competency to support certification. Graduates are initially employed as instructor pilots by flight training schools. As the graduates achieve 1200 to 1500 flight hours, they are competitive for hiring by regional or commuter airlines as First Officers.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Aviation Program at the LCC Aviation Center, telephone number (517) 483-1406.

REQUIREMENTS TOTAL: 41 CREDITS

CODE	TITLE	CREDIT HOURS
AVAF 134	Aircraft Instruments	2
AVFT 201	Flight Training I (See Note 1)	7.5
AVFT 202	Flight Training II (See Note 2)	5
AVFT 203	Flight Training III (See Note 3)	5.5
AVFT 204	Flight Training IV (See Note 4)	5
AVGS 101	Private Pilot Ground School	4
AVGS 211	Instrument Pilot Ground School	4
AVGS 221	Commercial Pilot Ground School	4
AVST 211	Flight Simulator I	1
AVST 212	Flight Simulator II	1
AVST 213	Flight Simulator III	1
AVST 214	Flight Simulator IV	1

LIMITED CHOICE REQUIREMENTS TOTAL: 22 CREDITS

Complete the indicated number of credits from each CHOICE listed below.

CHOICE 1: General Education Core Areas 12 Credits
(See the GENERAL EDUCATION section above)

Writing Core Area	3
Speech Communication Core Area	3
Science/Technology Core Area	3
Global Perspectives and Diversity Core Area	3
Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)	

CHOICE 2: Advanced Flight Training 10 Credits

AVFT 205	CFI Flight Training	3.5
AVFT 206	Instrument Instructor Flight	2.5
AVFT 207	Multi-Engine Flight Training	1.5
AVFT 208	Multi-Engine Instructor Flight	.75
AVFT 224	Tail Wheel Transition	1
AVGS 222	Flight Instruct Ground School	4
AVST 215	Multi-Engine Flight Simulator	1

MINIMUM TOTAL 63

NOTES:

1. This course is offered in modules: AVFT 201A, AVFT 201B, and AVFT 201C.
2. This course is offered in modules: AVFT 202A and AVFT 202B.
3. This course is offered in modules: AVFT 203A and AVFT 203B.
4. This course is offered in modules: AVFT 204A and AVFT 204B.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
AVFT 201	AVFT 202	AVAF 134	AVFT 204
AVGS 101	AVGS 211	AVFT 203	AVST 214
AVST 211	AVST 212	AVGS 221	Lim.Ch.
		AVST 213	Lim.Ch.
V	VI		
Lim.Ch.	Lim.Ch.		
Lim.Ch.	Lim.Ch.		
Lim.Ch.	Lim.Ch.		

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**AVIONICS
ASSOCIATE IN APPLIED SCIENCE DEGREE**

Curriculum Code: 0260 (Effective Fall 2001–Summer 2006)

Aviation electronics (avionics) is the application of electronics to aviation. Avionics technicians install and service complex communication, navigation, radar, and autopilot equipment. The avionics work environment is clean, well-lighted, and temperature-controlled. Students will find employment opportunities at airlines, airports, electronics manufacturers, and government agencies. LCC Avionics students can qualify for several industry training certificates from Allied Signal Aerospace. In addition, LCC offers on-site testing for the General Radiotelephone Operator License. Although students do not need any special skills to start the Avionics Program, they should be aware that color blindness may cause them difficulty because various electronic components are color-coded.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics. For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Aviation Program at the LCC Aviation Center, telephone number (517) 483-1406.

REQUIREMENTS

TOTAL: 65 CREDITS

CODE	TITLE	CREDIT HOURS
AVAF 130	Avionics Airframe Applications	2
AVEL 150	Avionics Installat/Generat	2
AVEL 151	Avionics Installat/Generat Lab	1
AVEL 190	Receiver Troubleshooting	2
AVEL 191	Receiver Troubleshooting Lab	1
AVEL 200	Flight Line Testing	2
AVEL 201	Flight Line Testing Lab	1
AVEL 220	Avionics Systems I	3
AVEL 221	Avionics Systems I Lab	2
AVEL 225	Avionics Licensing/Regulations	1
AVEL 226	FAA Rules/Regs Avionics Techs	1
AVEL 230	Avionics Systems II	3
AVEL 231	Avionics Systems II Lab	2
AVIR 140	Avionics Instruments	1
CISB 200	Info Sys Tech/Problem Solving	3
ELCT 101	Analog Problems	5
ELCT 109	DC Circuits	3
ELCT 110	AC Circuits	3
ELCT 112	Transistors	6
ELCT 120	Programming Preparation	2
ELCT 131	Digital Basics	3
ELCT 211	Linear Circuits I	3
ELCT 212	Linear Circuits II	3
ELCT 231	Advanced Digital Electronics	4
SPCH 110	Oral Communic in the Workplace	3
WRIT 124	Technical Writing	3

LIMITED CHOICE REQUIREMENTS

TOTAL: 3 CREDITS

Complete the indicated number of credits from each CHOICE listed below.

CHOICE 1: General Education Core Areas	3 Credits
(See the GENERAL EDUCATION section above)	
Writing Core Area (See Note 1)	0
Speech Communication Core Area (See Note 1)	0
Science/Technology Core Area (See Note 1)	0
Global Perspectives and Diversity Core Area	3
Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)	
MINIMUM TOTAL	68

NOTE:

1. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
AVAF 130	AVEL 150	AVEL 190	AVEL 220
AVIR 140	AVEL 151	AVEL 191	AVEL 221
ELCT 101	CISB 200	AVEL 200	ELCT 211
ELCT 109	ELCT 112	AVEL 201	ELCT 231
ELCT 110	ELCT 120		Lim.Ch.
SPCH 110	ELCT 131		

v

AVEL 225
AVEL 226
AVEL 230
AVEL 231
ELCT 212
WRIT 124

**AVIONICS INSTALLATION
CERTIFICATE OF COMPLETION**

Curriculum Code: 0847 (Effective Fall 2001–Summer 2006)

Aviation electronics (avionics) is the application of electronics to aviation. This program is designed for students who are interested in installing and testing complex communication, navigation, radar and autopilot equipment in aircraft. Employment opportunities are at airports that have avionics sales and service facilities, airlines and aircraft manufacturers.

REQUIREMENTS

TOTAL: 26 CREDITS

CODE	TITLE	CREDIT HOURS
AVAF 130	Avionics Airframe Applications	2
AVEL 150	Avionics Installat/Generat	2
AVEL 151	Avionics Installat/Generat Lab	1
AVEL 200	Flight Line Testing	2
AVEL 201	Flight Line Testing Lab	1
AVGM 113	Aviation General III	4
AVIR 140	Avionics Instruments	1
ELCT 101	Analog Problems	5
ELCT 109	DC Circuits	3
ELCT 110	AC Circuits	3
ELCT 120	Programming Preparation	2

LIMITED CHOICE REQUIREMENTS

TOTAL: 2 CREDITS

Complete the indicated number of credits from each CHOICE listed below.

CHOICE 1: Practical Experience	2 Credits
AVEL 297 Avionics Internship	2
AVEL 299 Advanced Avionics Laboratory	2

MINIMUM TOTAL

28

NOTE:

1. Although students do not need any special skills to start the Avionics Certificate Program, they should be aware that color blindness may cause them difficulty because various electronic components are color coded.

SUGGESTED COURSE SEQUENCE

I	II	III
AVAF 130	AVEL 150	AVEL 200
AVIR 140	AVEL 151	AVEL 201
ELCT 101	AVGM 113	Lim.Ch.
ELCT 109	ELCT 120	
ELCT 110		

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**POWERPLANT MAINTENANCE TECH
ASSOCIATE IN APPLIED SCIENCE DEGREE**

Curriculum Code: 0745 (Effective Fall 2001–Summer 2006)

Powerplant Maintenance Technicians maintain aircraft in accordance with the Federal Aviation Regulations. Technicians perform inspections, repairs and alterations to aircraft powerplants, propellers and their related systems. In addition, they troubleshoot the operation of induction, cooling, exhaust, fuel metering, ignition, electrical, starting, lubrication propeller and other associated systems. Powerplant maintenance technicians are employed throughout the world maintaining aircraft for major air carriers, commuter airlines, air freight operators, corporate flight departments, fixed base operators and a variety of other specialized aviation businesses. **Not all courses in this program transfer to all colleges.** Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Aviation Program at the LCC Aviation Center, telephone number (517) 483-1406.

REQUIREMENTS

TOTAL: 59 CREDITS

CODE	TITLE	CREDIT HOURS
AVAF 212	Aircraft Electrical II	4
AVGM 111	Aviation General I	4
AVGM 112	Aviation General II	6
AVGM 113	Aviation General III	4
AVGM 114	Material and Processes	5
AVPP 241	Reciprocating Engine	8
AVPP 251	Reciprocating Engine Systems	2
AVPP 253	Reciprocating Ignition Systems	5
AVPP 255	Reciprocating Induction System	4
AVPP 257	Aircraft Propeller Systems	4
AVPP 259	Turbine Engine I	4
AVPP 261	Turbine Engine II	4
AVPP 263	Turbine Engine Systems	2
AVPP 265	Powerplant Instruments	2
AVPP 267	National Powerplant Cert Proc	1

LIMITED CHOICE REQUIREMENTS

TOTAL: 12 CREDITS

Complete the indicated number of credits from *each* CHOICE listed below.

CHOICE 1: General Education Core Areas	12 Credits
(See the <i>GENERAL EDUCATION</i> section above)	
Writing Core Area	3
Speech Communication Core Area	3
Science/Technology Core Area	3
Global Perspectives and Diversity Core Area	3
Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)	
MINIMUM TOTAL	71

NOTE:

1. Students must complete each course with a minimum grade of 71 percent and pass Pre-Tests for General and Powerplant with a minimum grade of 80 percent to be approved for the Federal Aviation Administration written tests.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
AVGM 111	AVAF 212	AVPP 253	AVPP 261
AVGM 112	AVPP 241	AVPP 255	AVPP 263
AVGM 113	AVPP 251	AVPP 257	AVPP 265
AVGM 114	Lim.Ch.	AVPP 259	AVPP 267
			Lim.Ch.
			Lim.Ch.
			Lim.Ch.

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**BUSINESS ADMINISTRATION
ASSOCIATE IN BUSINESS DEGREE**

Curriculum Code: 0243 (Effective Fall 2001–Summer 2006)

This degree program provides basic instruction in key business areas, such as management, marketing, finances, computers and other business-related areas. Graduates of this program may qualify for entry level/hands-on positions. Additional education will enhance an individual's employment and advancement opportunities. **Not all courses in this program transfer to all colleges.** Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Business Careers Department, Old Central Building, Room 210, telephone number (517) 483-1522.

REQUIREMENTS

TOTAL: 41 CREDITS

CODE	TITLE	CREDIT HOURS
ACCG 210	Principles of Accounting I	4
BUSN 118	Introduction to Business	3
BUSN 201	International Business	3
CISB 200	Info Sys Tech/Problem Solving	3
ECON 201	Principles of Economics-Micro	3
LEGL 215	Busn Law I, Basic Principles	3
MATH 117	Math for Business	4
MGMT 200	Creative Thinking for Business	3
MGMT 225	Principles of Management	3
MGMT 234	Diversity in the Workplace	3
MKTG 200	Principles of Marketing	3
SPCH 110	Oral Communic in the Workplace	3
WRIT 127	Business Writing	3

LIMITED CHOICE REQUIREMENTS

TOTAL: 20-23 CREDITS

Complete the indicated number of credits from *each CHOICE* listed below.

CHOICE 1:	General Education Core Areas (See Note 1)	0 Credits
	(See the <i>GENERAL EDUCATION</i> section above)	
	Writing Core Area	0
	Speech Communication Core Area	0
	Science/Technology Core Area	0
	Global Perspectives and Diversity Core Area	0
	Mathematics Competency	0
CHOICE 2:	Management Related (See Note 2)	5-6 Credits
CHOICE 3:	Marketing Related (See Note 3)	5-6 Credits
CHOICE 4:	Computer Related (See Note 4)	4-5 Credits
CHOICE 5:	Business Related (See Note 5)	6 Credits
ACCG 211	Principles of Accounting II	4
BUSN 250	Personal Finance	3
BUSN 251	Stock Market Essentials	3
ECON 202	Principles of Economics-Macro	3
ECON 213	U.S. Economic/Business History	3
LABR 200	Intro to Labor Relations	3
LABR 204	Employment Law for Managers	3
LEGL 216	Busn Law II, Commercial Law	3
LEGL 217	Busn Law III, Busn Organiza	3
MINIMUM TOTAL		61

NOTES:

1. Students completing *REQUIREMENTS* have fulfilled the requirements for these Core areas.
2. Choose courses with a MGMT prefix that are not already used to meet degree requirements. Up to 3 credits total from the T.I.M.E. Series may be used (MGMT 240—MGMT 279). BUSN 295 may also be used.
3. Choose courses with a MKTG prefix that are not already used to meet degree requirements.
4. Choose CABS-prefix courses of 110 or above.
5. Students should confer with a Business Careers program advisor to assure that selection of Limited Choice courses will best fit their career plans.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
BUSN 118	BUSN 201	ACCG 210	LEGL 215
MATH 117	CISB 200	ECON 201	Lim.Ch.
SPCH 110	MGMT 234	MGMT 200	Lim.Ch.
WRIT 127	MKTG 200	MGMT 225	Lim.Ch.
Lim.Ch.	Lim.Ch.	Lim.Ch.	Lim.Ch.

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**E-BUSINESS
ASSOCIATE IN BUSINESS DEGREE**

Curriculum Code: 0839 (Effective Fall 2001–Summer 2006)

The Internet is changing the way business is being conducted and the way societies function. E-business is the use of technology in day-to-day business transactions. Students will learn to apply technical and behavioral skills to the various progressive possibilities of e-business as it relates to current business practices. Graduates of this program are prepared to work in a variety of manufacturing, wholesaling, and retailing environments, as well as the service sector of our economy. **Not all courses in the program transfer to all colleges.** Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Business Careers Department, Old Central Building, Room 210, telephone number (517) 483-1522.

REQUIREMENTS TOTAL: 48 CREDITS

CODE	TITLE	CREDIT HOURS
BUSN 118	Introduction to Business	3
CABS 195	Microsoft Windows	2
CISB 102	Internet Literacy	3
CISB 114	Programming Logic	3
CISB 130	Data Communications	3
CISB 200	Info Sys Tech/Problem Solving	3
CISB 203	Developing Pages for the Web	3
CISB 204	Commercial Internet Site Mgmt	3
CISB 253	WWW Interactive Programming	4
MGMT 234	Diversity in the Workplace	3
MKTG 119	Mktg/Manage your Profess Image	3
MKTG 120	Sales	3
MKTG 200	Principles of Marketing	3
MKTG 210	Marketing on the Internet	3
SPCH 110	Oral Communic in the Workplace	3
WRIT 124	Technical Writing	3

LIMITED CHOICE REQUIREMENTS TOTAL: 12 CREDITS

Complete the indicated number of credits from *each CHOICE* listed below.

CHOICE 1: General Education Core Areas 0 Credits

(See the *GENERAL EDUCATION* section above)

Writing Core Area (See Note 1)	0
Speech Communication Core Area (See Note 1)	0
Science/Technology Core Area (See Note 1)	0
Global Perspectives and Diversity Core Area (See Note 1)	0
Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)	0

CHOICE 2: Business Related (See Note 2) 12 Credits

ACCG 210	Principles of Accounting	4
BUSN 295	Small Business Management	3
CABS 110	Microsoft Office	3
CISB 119	Intro Window Prog Visual BASIC	4
CISB 122	Adv Windows Prog Visual BASIC	3
ECON 201	Principles of Economics-Micro	3
MGMT 150	Managing Customer Relations	3
MGMT 200	Creative Thinking for Business	3
MKTG 123	Comput Field Sales Internship	3
MKTG 130	Retailing	3
MKTG 140	Introduction to Advertising	3
MKTG 202	Managerial Marketing	3
MKTG 204	Marketing Research	3
MKTG 221	Consumer Behavior	2
MKTG 229	Public Relations	2

MINIMUM TOTAL 60

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NOTES:

1. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.
2. Students may also choose up to 3 credits of T.I.M.E. Series courses (MGMT 240-279). Students should confer with a Business Careers Advisor to assure that the selection of Limited Choice courses will best fit their career plans.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
BUSN 118	CISB 114	CISB 130	CISB 200
CABS 195	CISB 203	CISB 204	CISB 253
CISB 102	MKTG 120	SPCH 110	MGMT 234
MKTG 200	MKTG 210	WRIT 124	MKTG 119
Lim. Ch.	Lim. Ch.	Lim. Ch.	Lim. Ch.

**E-BUSINESS
CERTIFICATE OF ACHIEVEMENT**

Curriculum Code: 0845 (Effective Fall 2001–Summer 2006)

This certificate provides students with the opportunity to develop technical and marketing knowledge necessary to use the internet as a business tool. Students will learn how to use business, marketing, and web related resources. Emphasis in this program is on business applications. All of the course work may be applied toward the E-Business, Associate in Business Degree.

REQUIREMENTS TOTAL: 23 CREDITS

CODE	TITLE	CREDIT HOURS
BUSN 118	Introduction to Business	3
CABS 195	Microsoft Windows	2
CISB 102	Internet Literacy	3
CISB 203	Developing Pages for the Web	3
CISB 204	Commercial Internet Site Mgmt	3
MKTG 120	Sales	3
MKTG 200	Principles of Marketing	3
MKTG 210	Marketing on the Internet	3

LIMITED CHOICE REQUIREMENTS TOTAL: 7 CREDITS

Complete the indicated number of credits from *each CHOICE* listed below.

CHOICE 1: Business Related (See Note 1) 7 Credits

BUSN 295	Small Business Management	3
CISB 114	Programming Logic	3
CISB 130	Data Communications	3
MKTG 221	Consumer Behavior	2
SPCH 110	Oral Communic in the Workplace	3
WRIT 124	Technical Writing	3

MINIMUM TOTAL 30

NOTES:

1. Students may also choose up to 2 credits of T.I.M.E. Series courses (MGMT 240-279). Students should confer with a Business Careers Program Advisor to assure that the selection of Limited Choice courses will best fit their career plans.

SUGGESTED COURSE SEQUENCE

I	II
BUSN 118	CISB 203
CABS 195	CISB 204
CISB 102	MKTG 120
MKTG 200	MKTG 210
Lim. Ch.	Lim. Ch.
Lim. Ch.	

**INTERNATIONAL BUSINESS
ASSOCIATE IN BUSINESS DEGREE**

Curriculum Code: 0240 (Effective Fall 2001–Summer 2006)

International business managers plan, organize, and control projects from start to finish for businesses and organizations with international connections. They help their company achieve its goals in differing cultural and governmental situations. Graduates of this program may work for a variety of organizations and businesses, both in this hemisphere and overseas. Knowledge of a foreign language and a technical or business specialty increases one's employability. **Not all courses in this program transfer to all colleges.** Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Business Careers Department, Old Central Building, Room 210, telephone number (517) 483-1522.

REQUIREMENTS

TOTAL: 34 CREDITS

CODE	TITLE	CREDIT HOURS
ACCG 210	Principles of Accounting I	4
BUSN 118	Introduction to Business	3
BUSN 201	International Business	3
CISB 100	Intro Computer Info Systems	3
CISB 200	Info Sys Tech/Problem Solving	3
ECON 201	Principles of Economics-Micro	3
ECON 202	Principles of Economics-Macro	3
MGMT 234	Diversity in the Workplace	3
MKTG 119	Mktg/Manage Your Profess Image	3
MKTG 200	Principles of Marketing	3
SPCH 110	Oral Communic in the Workplace	3

LIMITED CHOICE REQUIREMENTS

TOTAL: 26 CREDITS

Complete the indicated number of credits from *each CHOICE* listed below.

CHOICE 1: General Education Core Areas 3 Credits
(See the *GENERAL EDUCATION* section above)

Writing Core Area	3
Speech Communication Core Area (See Note 1)	0
Science/Technology Core Area (See Note 1)	0
Global Perspectives and Diversity Core Area (See Note 1)	0
Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)	0

CHOICE 2: Foreign Language (Choose 1 Subchoice) 8 Credits

Subchoice 2A	
FREN 121 Elementary French I	4
FREN 122 Elementary French II	4

Subchoice 2B	
GRMN 121 Elementary German I	4
GRMN 122 Elementary German II	4

Subchoice 2C	
JAPN 121 Elementary Japanese I	4
JAPN 122 Elementary Japanese II	4

Subchoice 2D	
SPAN 121 Elementary Spanish I	4
SPAN 122 Elementary Spanish II	4

CHOICE 3: International/Business Related (See Note 2)	15 Credits
ACCG 211 Principles of Accounting II	4
BUSN 295 Small Business Management	3
GEOG 200 World Regional Geography	4
GEOG 203 Economic Geography	3
HUMS 213 World Civilizations I	4
HUMS 214 World Civilizations II	4
LEGL 215 Busn Law I, Basic Principles	3
MGMT 101 Management Special Topics	1
MGMT 225 Principles of Management	3
MGMT 231 Team Development	3
MGMT 237 Managing/Continual Improvement	3
MGMT 280 Management Internship	3
MKTG 101 Marketing Special Topics	1
MKTG 210 Marketing on the Internet	3
MKTG 235 Marketing Internship	3
POLS 270 International Relations	3

MINIMUM TOTAL 60

NOTES:

1. Students completing *REQUIREMENTS* have fulfilled the requirements for this Core area.
2. Students should confer with a Business Careers program advisor to assure that selection of Limited Choice courses will best fit their career plans.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
BUSN 118	BUSN 201	ACCG 210	ECON 202
CISB 100	MGMT 234	CISB 200	Lim.Ch.2
MKTG 119	MKTG 200	ECON 201	Lim.Ch.3
SPCH 110	Lim.Ch.3	Lim.Ch.2	Lim.Ch.3
Lim.Ch.1	Lim.Ch.3	Lim.Ch.3	

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**CIVIL TECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE DEGREE**

Curriculum Code: 0178 (Effective Fall 2001–Summer 2006)

Civil engineering technicians apply theory and principles of civil engineering in planning, designing, and overseeing the construction and maintenance of structures and facilities in the highway system. They may work at construction or survey sites, offices or in testing labs with engineers, surveyors, supervisors, managers, or skilled trade workers. The successful civil engineering technician must have a working knowledge of college algebra and trigonometry, civil drafting, communications, construction materials, surveying, and must be computer literate. Civil engineering technicians work for construction, engineering, and architecture firms, government agencies, mapping agencies, and private petroleum and mining companies.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Technology Careers Department, Gannon Vocational-Technical Center, Room 1380, telephone number (517) 483-1336.

REQUIREMENTS

TOTAL: 60 CREDITS

CODE	TITLE	CREDIT HOURS
CIVL 101	Civil Drafting	4
CIVL 120	Surveying	4
CIVL 124	Route Survey	4
CIVL 131	Traffic Technology	3
CIVL 132	Construction Materials	5
CIVL 135	Soils Technology	3
CIVL 136	Hydrology and Highway Tech	5
CIVL 200	Civil Mathematics	5
CIVL 241	Statics/Strength of Materials	5
GRET 203	Beginning MicroStation	3
MATH 114	Technical Math I	4
MATH 115	Technical Math II	4
PHYS 200	Applied Physics	4
SOCL 120	Introduction to Sociology	4
SPCH 120	Dynamics of Communication	3

LIMITED CHOICE REQUIREMENTS

TOTAL: 6 CREDITS

Complete the indicated number of credits from *each CHOICE* listed below.

CHOICE 1: General Education Core Areas	6 Credits
(See the <i>GENERAL EDUCATION</i> section above)	
Writing Core Area	3
Speech Communication Core Area (See Note 1)	0
Science/Technology Core Area	3
Global Perspectives and Diversity Core Area (See Note 1)	0
Mathematics Competency (See Note 1)	0

MINIMUM TOTAL 66

NOTES:

- Students completing *REQUIREMENTS* have fulfilled the requirements for this Core area.
- Students who are interested in practical field experience may apply for the Student Civil Technician Co-op Program. Contact the Technology Careers Co-op Coordinator at 483-1383.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
CIVL 131	CIVL 101	CIVL 124	CIVL 132
MATH 114	CIVL 120	GRET 203	CIVL 136
SPCH 120	CIVL 135	MATH 115	CIVL 241
Lim.Ch.	CIVL 200	PHYS 200	
Lim.Ch.		CIVL 124	

STUDENTS ARE RESPONSIBLE FOR COMPLETING ALL REQUIREMENTS AS STATED. THE ONLY OFFICIAL DOCUMENTATION OF PROGRAM COMPLETION STATUS IS AN AUDIT CONDUCTED BY THE REGISTRAR'S OFFICE THAT IS INITIATED WHEN STUDENTS APPLY FOR A DEGREE OR CERTIFICATE. STUDENTS ARE EXPECTED TO APPLY ONE SEMESTER PRIOR TO THE SEMESTER THEY INTEND TO GRADUATE.

**CAD/CAM TECHNICIAN
ASSOCIATE IN APPLIED SCIENCE DEGREE**

Curriculum Code: 0892 (Effective Fall 2001-Summer 2006)

This curriculum is intended for students planning to pursue a career in mechanical computer-aided design and manufacturing (CAD/CAM). Graduates often seek employment with companies who expect their CAD operators to also be computer numerically controlled (CNC) machine tool path programmers as well as designers. The increase in the level of sophistication of computer-aided design systems has necessitated that the designer assist in the creation of the tool path or support machinists engaged in this task. Responsibilities include graphically representing engineering math data and generating the necessary instruction for computer controlled lathes, mills, and automated machine tools, both manually and electronically. CAD/CAM technicians are employed by manufacturing companies, machine shops, and die design and construction shops in many areas of the automotive, aerospace, and special machinery manufacturing market. **Not all courses in this program transfer to all colleges.** Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Technology Careers Department, Gannon Vocational-Technical Center, Room 1380, telephone number (517) 483-1336.

REQUIREMENTS

TOTAL: 49 CREDITS

CODE	TITLE	CREDIT HOURS
CADD 101	Mechanical Drafting/Basic CAD	4
CADD 102	Advanced Mechanical Drafting	4
CADD 103	Geometric Dimension/Tolerance	3
CADD 104	Descriptive Geometry	4
CADD 131	AutoCAD Basic 2-D	4
CNCP 110	Foundations of CNC Programming	4
CNCP 210	Mastercam	4
MACH 100	Manufacturing Processes	4
MACH 105	Machine Tool Survey	3
MACH 110	Machine Tool Technology I	4
MACH 111	Machine Tool Technology II	4
MACH 135	Metallurgy and Heat Treat	4
MATH 141	Calculus with Applications	3

LIMITED CHOICE REQUIREMENTS

TOTAL: 20 CREDITS

Complete the indicated number of credits from *each CHOICE* listed below.

CHOICE 1: General Education Core Areas 12 Credits

(See the *GENERAL EDUCATION* section above)

Writing Core Area	3
Speech Communication Core Area	3
Science/Technology Core Area	3
Global Perspectives and Diversity Core Area	3
Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)	

CHOICE 2: Computer Graphics 8 Credits

(Choose one subchoice. See Note 1)

Subchoice 2A

CADD 232	AutoCAD Advanced 3-D	4
CADD 233	Autodesk Mechanical Desktop	4

Subchoice 2B

CADD 242	Unigraphics Basic	4
CADD 243	Unigraphics Advanced	4

MINIMUM TOTAL 69

NOTES:

1. The Computer Graphics series (Choice 2, 8 credits) may be replaced by another approved computer graphics software package available through the Computer-Aided Drafting and Design Program. See a Computer-Aided Drafting and Design program advisor for more information.
2. Some prerequisites to courses may be waived based on experience. See an advisor for more information.

SUGGESTED COURSE SEQUENCE:

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
CADD 101	CADD 102	CNCP 110	CNCP 210
CADD 103	CADD 104	MACH 111	Lim.Ch.1
MACH 100	CADD 131	Lim.Ch.1	Lim.Ch.1
MACH 105	MACH 110	Lim.Ch.1	Lim.Ch.2
MATH 141	MACH 135	Lim.Ch.2	

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**COMPUTER-AIDED DRAFTING/DESIGN
ASSOCIATE IN APPLIED SCIENCE DEGREE**

Curriculum Code: 0165 (Effective Fall 2001–Summer 2006)

This program prepares individuals to apply technical knowledge and skills to plan and prepare scale pictorial interpretations of engineering and design concepts. Students receive instruction in the use of precision drawing instruments, computer-assisted design programs, sketching and illustration, and specification interpretation. Proficiency in the use of current computer-aided design packages, up-to-date geometric tolerancing techniques, and descriptive geometry applications is necessary to succeed in the industrial workplace. Employment possibilities include engineering firms, consulting firms, the automotive industry, manufacturers of special machinery, tool and die industry, etc.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Technology Careers Department, Gannon Vocational-Technical Center, Room 1380, telephone number (517) 483-1336.

REQUIREMENTS

TOTAL: 42 CREDITS

CODE	TITLE	CREDIT HOURS
CADD 101	Mechanical Drafting/Basic CAD (See Note 1)	4
CADD 102	Advanced Mechanical Drafting	4
CADD 103	Geometric Dimension/Tolerance	3
CADD 104	Descriptive Geometry	4
CADD 131	AutoCAD Basic 2-D	4
CADD 284	Jigs and Fixture Design	4
CNCP 105	Basic Machining Processes	3
MACH 100	Manufacturing Processes	4
MACH 135	Metallurgy and Heat Treat	4
MATH 114	Technical Math I	4
MATH 115	Technical Math II	4

LIMITED CHOICE REQUIREMENTS

TOTAL: 20 CREDITS

Complete the indicated number of credits from *each CHOICE* listed below.

CHOICE 1: General Education Core Areas 12 Credits

(See the *GENERAL EDUCATION* section above)

Writing Core Area	3
Speech Communication Core Area	3
Science/Technology Core Area	3
Global Perspectives and Diversity Core Area	3
Mathematics Competency (See Note 2)	

CHOICE 2: Computer Graphics 8 Credits

(Choose one subchoice. See Note 3)

Subchoice 2A

CADD 232	AutoCAD Advanced 3-D	4
CADD 233	Autodesk Mechanical Desktop (See Note 4)	4

Subchoice 2B

CADD 242	Unigraphics Basic	4
CADD 243	Unigraphics Advanced	4

MINIMUM TOTAL 62

NOTES:

1. Basic mechanical drafting skills are necessary to begin this curriculum and may be demonstrated by a score of 80% or better on the Drafting Placement Test or by passing CADD 100 with a 2.5 minimum grade.
2. Students completing *REQUIREMENTS* have fulfilled the requirements for this Core area.
3. The Computer Graphics series (8 credits) may be replaced by another approved computer graphics software package available through the CADD Program. See a CADD program advisor for more information.
4. CADD 234—Autodesk Inventor may be substituted for CADD 233.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
CADD 101	CADD 102	CNCP 105	CADD 284
CADD 103	CADD 104	MACH 135	Lim.Ch.1
MACH 100	CADD 131	Lim.Ch.1	Lim.Ch.1
MATH 114	MATH 115	Lim.Ch.2	Lim.Ch.2
Lim.Ch.1			

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**COMPUTER-AIDED DRAFTING/DESIGN
CERTIFICATE OF ACHIEVEMENT**

Curriculum Code: 0145 (Effective Fall 2001–Summer 2006)

This curriculum has been identified by local industry as comprising the minimal requirements needed for employment consideration. Students completing this curriculum are eligible to apply for entry-level drafting or computer-aided designer (CAD) positions.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

INFORMATION

Contact the Technology Careers Department, Gannon Vocational-Technical Center, Room 1380, telephone number (517) 483-1336.

REQUIREMENTS

TOTAL: 27 CREDITS

CODE	TITLE	CREDIT HOURS
CADD 101	Mechanical Drafting/Basic CAD (See Note 1)	4
CADD 102	Advanced Mechanical Drafting	4
CADD 103	Geometric Dimension/Tolerance	3
CADD 104	Descriptive Geometry	4
CADD 131	AutoCAD Basic 2-D	4
MACH 100	Manufacturing Processes	4
MATH 114	Technical Math I	4

LIMITED CHOICE REQUIREMENTS

TOTAL: 8 CREDITS

Complete the indicated number of credits from *each* CHOICE listed below.

CHOICE 1: Computer Graphics

8 Credits

(Choose one subchoice. See Note 2)

Subchoice 1A

CADD 232	AutoCAD Advanced 3-D	4
CADD 233	Autodesk Mechanical Desktop	4

Subchoice 1B

CADD 242	Unigraphics Basic	4
CADD 243	Unigraphics Advanced	4

MINIMUM TOTAL

35

NOTE:

- Basic mechanical drafting skills are necessary to begin this curriculum and may be demonstrated by a score of 80% or better on the Drafting Placement Test or by passing CADD 100 with a 2.5 minimum grade.
- The Computer Graphics series (8 credits) may be replaced by another approved computer graphics software package available through the CADD Program. See a CADD program advisor for more information.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
CADD 101	CADD 102	MACH 100	Lim.Ch.
CADD 103	CADD 104	Lim.Ch.	
MATH 114	CADD 131		

**COMPUTER NETWORK/COMMUNICATION
ASSOCIATE IN BUSINESS DEGREE**

Curriculum Code: 0791 (Effective Fall 2001–Summer 2006)

Computer networking and communication specialists plan, develop, and administer network and communication systems. They may develop applications to be deployed and oversee the operation of the network. They may provide software and hardware support for the networking infrastructure including database development. They will work with Internet and World Wide Web connections including the development of home pages and e-mail.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Business Careers Department, Old Central Building, Room 210, telephone number (517) 483-1522.

REQUIREMENTS TOTAL: 36 CREDITS

CODE	TITLE	CREDIT HOURS
CABS 195	Microsoft Windows	2
CISB 100	Intro Computer Info Systems	3
CISB 102	Internet Literacy	3
CISB 119	Intro Window Prog Visual BASIC	4
CISB 130	Data Communications	3
CISB 133	Operating Systems	3
CISB 200	Info Sys Tech/Problem Solving	3
CISB 203	Developing Pages for the Web	3
CISB 204	Commercial Internet Site Mgmt	3
CISB 230	Intro to Local Area Networks	3
CISB 231	Advanced Local Area Networks	3
CISB 233	Microsoft Windows NT Server	3

LIMITED CHOICE REQUIREMENTS TOTAL: 24–26 CREDITS

Complete the indicated number of credits from *each* CHOICE listed below.

CHOICE 1: General Education Core Areas 3 Credits

(See the *GENERAL EDUCATION* section above)

Writing Core Area (See Note 1)	0
Speech Communication Core Area	3
Science/Technology Core Area (See Note 2)	0
Global Perspectives and Diversity Core Area (See Note 3)	0
Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)	

CHOICE 2: Writing 3–4 Credits

WRIT 121	Composition I	4
WRIT 124	Technical Writing	3

CHOICE 3: Global Perspectives 3 Credits

MGMT 234	Diversity in the Workplace	3
OADM 275	Cultural Differences in Busn	3

CHOICE 4: Web Programming 3–4 Credits

CISB 253	WWW Interactive Programming	4
CISB 283	Intro to JAVA Programming	3

CHOICE 5: Computer Specialty Area (See Note 4)	12 Credits	
CABS 110	Microsoft Office	3
CABS 210	Advanced Microsoft Office	3
CISB 122	Adv Windows Prog Visual BASIC	3
CISB 136	SQL: Structured Query Language	2
CISB 141	Powerbuilder	3
CISB 143	ORACLE Database for Business	2
CISB 180	Intro to C/C++ Program for Bus	3
CISB 234	Linux/UNIX Operating System	3
CISB 235	Microcomputer Hardware Support	3
CISB 236	Microcomputer Software Support	3
CISB 247	Microcomputer Project	2
CISB 250	Database Concepts	3
CISB 260	Systems Analysis and Design	4
CISB 261	Systems Implementation	3
CISB 281	Visual C++ Programming	3
CISB 283	Intro to JAVA Programming	3

MINIMUM TOTAL 60

NOTES:

- Students must complete one course from Choice 2 to fulfill the requirements for this Core area.
- Students completing *REQUIREMENTS* have fulfilled the requirements for this Core area.
- Students must complete one course from Choice 3 to fulfill the requirements for this Core area.
- Other CABS or CISB-prefix courses may be approved for Choice 2 by a Computer Information Systems Academic Program advisor.
- For graduation from this program, a student must have earned a minimum 2.0 grade in each course with a CABS or CISB prefix.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
CABS 195	CISB 130	CISB 200	CISB 203
CISB 100	CISB 133	CISB 204	CISB 231
CISB 102	Lim.Ch.1	CISB 230	CISB 233
CISB 119	Lim.Ch.5	Lim.Ch.2	Lim.Ch.3
Lim.Ch.5		Lim.Ch.5	Lim.Ch.4
			Lim.Ch.5

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**COMPUTER NETWORK/COMMUNICATION
CERTIFICATE OF COMPLETION**

Curriculum Code: 0842 (Effective Fall 2001–Summer 2006)

This certificate provides students with the upper level technical skills necessary to plan, develop, and administer network and communications systems. It is designed for students who already have basic computer skills and want to specialize in computer networking. This course work will apply toward completion of the Computer Networking/Communication Associate in Business.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

INFORMATION

Contact the Business Careers Department, Old Central Building, Room 210, telephone number (517) 483-1522.

REQUIREMENTS

TOTAL: 18 CREDITS

CODE	TITLE	CREDIT HOURS
CISB 130	Data Communications	3
CISB 133	Operating Systems	3
CISB 230	Intro to Local Area Networks	3
CISB 231	Advanced Local Area Networks	3
CISB 233	Microsoft Windows NT Server	3
CISB 234	Linux/UNIX Operating System	3

LIMITED CHOICE REQUIREMENTS

TOTAL: 8 CREDITS

Complete the indicated number of credits from each CHOICE listed below.

CHOICE 1:	Computer Specialty Area	8 Credits
CABS 110	Microsoft Office	3
CABS 210	Advanced Microsoft Office	3
CISB 122	Adv Windows Prog Visual BASIC	3
CISB 136	SQL: Structured Query Language	2
CISB 141	Powerbuilder	3
CISB 143	ORACLE Database for Business	3
CISB 180	Intro to C/C++ Program for Bus	3
CISB 235	Microcomputer Hardware Support	3
CISB 236	Microcomputer Software Support	3
CISB 247	Microcomputer Project	2
CISB 250	Database Concepts	3
CISB 260	Systems Analysis and Design	4
CISB 281	Visual C++ Programming	3
CISB 283	Intro to JAVA Programming	3

MINIMUM TOTAL 26

NOTES:

- 1 Prerequisites may be waived based on experience. See a CIS program advisor prior to registration for more information.
- 2 Students must complete each CABS and CISB course with a minimum grade of 2.0 to receive this certificate of completion.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III
CISB 130	CISB 230	CISB 231
CISB 133	CISB 233	Lim.Ch.
Lim.Ch.	CISB 234	Lim.Ch.

STUDENTS ARE RESPONSIBLE FOR COMPLETING ALL REQUIREMENTS AS STATED. THE ONLY OFFICIAL DOCUMENTATION OF PROGRAM COMPLETION STATUS IS AN AUDIT CONDUCTED BY THE REGISTRAR'S OFFICE THAT IS INITIATED WHEN STUDENTS APPLY FOR A DEGREE OR CERTIFICATE. STUDENTS ARE EXPECTED TO APPLY ONE SEMESTER PRIOR TO THE SEMESTER THEY INTEND TO GRADUATE.

**COMPUTER PROGRAMMER/ANALYST
ASSOCIATE IN BUSINESS DEGREE**

Curriculum Code: 0113 (Effective Fall 2001–Summer 2006)

Programmer/Analysts plan, develop, test, and document computer programs at the request of a specific user, applying knowledge of programming techniques and computer systems. They may evaluate user requests to determine feasibility, cost and time required, as well as compatibility with current system and computer capabilities. In addition, they read manuals, periodicals, and technical reports to develop programs that meet user requirements. They formulate a plan outlining steps required to develop programs and convert project specifications into program source instructions which are entered into the computer system and tested. They may write documentation and the user manual.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Business Careers Department, Old Central Building, Room 210, telephone number (517) 483-1522.

REQUIREMENTS

TOTAL: 30 CREDITS

CODE	TITLE	CREDIT HOURS
CABS 195	Microsoft Windows	2
CISB 100	Intro Computer Info Systems	3
CISB 102	Internet Literacy	3
CISB 114	Programming Logic	3
CISB 130	Data Communications	3
CISB 133	Operating Systems	3
CISB 200	Info Sys Tech/Problem Solving	3
CISB 250	Database Concepts	3
CISB 260	Systems Analysis and Design	4
CISB 261	Systems Implementation	3

LIMITED CHOICE REQUIREMENTS

TOTAL: 32–36 CREDITS

Complete the indicated number of credits from *each CHOICE* listed below.

CHOICE 1: General Education Core Areas 3 Credits

(See the *GENERAL EDUCATION* section above)

Writing Core Area (See Note 1)	0
Speech Communication Core Area	3
Science/Technology Core Area (See Note 2)	0
Global Perspectives and Diversity Core Area (See Note 3)	0
Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)	0

CHOICE 2: Programming Tracks (Choose 2 Subchoices) 14 Credits

Subchoice 2A: Visual Basic Programming Track

CISB 119	Intro Window Prog Visual BASIC	4
CISB 122	Adv Windows Prog Visual BASIC	3

Subchoice 2B: C Programming Track

CISB 180	Intro to C/C++ Program for Bus	3
CISB 280	Adv C/C++ Program with OOP	4

Subchoice 2C: COBOL Programming Track

CISB 170	COBOL I	4
CISB 270	COBOL II	3

Subchoice 2D: Internet Programming Track

CISB 253	WWW Interactive Programming	4
CISB 283	Intro to JAVA Programming	3

CHOICE 3: Writing 3–4 Credits

WRIT 121	Composition I	4
WRIT 124	Technical Writing	3

CHOICE 4: Global Perspectives 3 Credits	
MGMT 234	Diversity in the Workplace 3
OADM 275	Cultural Differences in Busn 3

CHOICE 5: Business Related 3–4 Credits	
ACCG 100	Practical Accounting Non-Major 3
ACCG 210	Principles of Accounting I 4
BUSN 118	Introduction to Business 3

CHOICE 6: Computer related (See Note 4) 6–8 Credits	
CABS 110	Microsoft Office 3
CABS 133	Microsoft Access Database 2
CABS 232	Advanced Microsoft Access 2
CABS 234	Programming Microsoft Access 2
CISB 136	SQL: Structured Query Language 2
CISB 143	ORACLE Database for Business 2
CISB 203	Developing Pages for the Web 3
CISB 204	Commercial Internet Site Mgmt 3
CISB 230	Intro to Local Area Networks 3
CISB 231	Advanced Local Area Networks 3
CISB 233	Microsoft Windows NT Server 3
CISB 234	Linux/UNIX Operating System 3
CISB 235	Microcomputer Hardware Support 3
CISB 236	Microcomputer Software Support 3
CISB 245	Programming Internship 3
CISB 247	Microcomputer Project 2
CISB 281	Visual C++ Programming 3
CQOP 210	Cooperative Education (Tech) 3

MINIMUM TOTAL

62

NOTES:

1. Students must complete one course from Choice 3 to fulfill the requirements for this Core area.
2. Students completing *REQUIREMENTS* have fulfilled the requirements for this Core area.
3. Students must complete one course from Choice 4 to fulfill the requirements for this Core area.
4. Students may also select from unchosen courses in Choice 2 Programming Tracks or other CABS and CISB courses approved by a program advisor.
5. For graduation from this program, a student must have earned a minimum 2.0 grade in each course with a CABS or CISB prefix.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
CABS 195	CISB 130	CISB 200	CISB 261
CISB 100	CISB 133	CISB 260	Lim.Ch.2
CISB 102	CISB 250	Lim.Ch.2	Lim.Ch.4
CISB 114	Lim.Ch.1	Lim.Ch.2	Lim.Ch.6
Lim.Ch.3	Lim.Ch.2	Lim.Ch.6	Lim.Ch.6
Lim.Ch.5			

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**COMPUTER PROGRAMMER/ANALYST
CERTIFICATE OF COMPLETION**

Curriculum Code: 0969 (Effective Fall 2001–Summer 2006)

This certificate provides students with the entry-level skills to perform as a computer programmer of business applications in one language. It is designed for students who already have basic computer skills. This course work will apply toward completion of the Computer Programmer/Analyst Associate in Business degree.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

INFORMATION

Contact the Business Careers Department, Old Central Building, Room 210, telephone number (517) 483-1522.

REQUIREMENTS

TOTAL: 13 CREDITS

CODE	TITLE	CREDIT HOURS
CISB 100	Intro Computer Info Systems	3
CISB 102	Internet Literacy	3
CISB 250	Database Concepts	3
CISB 260	Systems Analysis and Design	4

LIMITED CHOICE REQUIREMENTS

TOTAL: 10–11 CREDITS

Complete the indicated number of credits from *each CHOICE* listed below.

CHOICE 1: Business Related Electives

3–4 Credits

ACCG 100	Practical Accounting Non-Major	3
ACCG 210	Principles of Accounting I	4
BUSN 118	Introduction to Business	3

CHOICE 2: Programming Track (Choose one subchoice)

7 Credits

Subchoice 2A: Visual BASIC Track

CISB 119	Intro Window Prog Visual BASIC	4
CISB 122	Adv Windows Prog Visual BASIC	3

Subchoice 2B: C Programming Track

CISB 180	Intro to C/C++ Program for Bus	3
CISB 280	Adv C/C++ Program with OOP	4

Subchoice 2C: COBOL Track

CISB 170	COBOL I	4
CISB 270	COBOL II	3

Subchoice 2D: Internet Programming Track

CISB 203	Developing Pages for the Web	3
CISB 253	WWW Interactive Programming (See Note 2)	4

MINIMUM TOTAL

23

NOTES:

- Prerequisites may be waived based on experience. See a CIS program advisor prior to registration for more information.
- Students may substitute CISB 283—Intro to JAVA Programming for this course.
- Students must complete each CISB course with a minimum grade of 2.0 to receive this certificate of completion.
- This curriculum, using Subchoice 2D, may be completed through the Virtual College via the Internet.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II
CISB 100	CISB 250
CISB 102	CISB 260
Lim.Ch.1	Lim.Ch.2
Lim.Ch.2	

STUDENTS ARE RESPONSIBLE FOR COMPLETING ALL REQUIREMENTS AS STATED. THE ONLY OFFICIAL DOCUMENTATION OF PROGRAM COMPLETION STATUS IS AN AUDIT CONDUCTED BY THE REGISTRAR'S OFFICE THAT IS INITIATED WHEN STUDENTS APPLY FOR A DEGREE OR CERTIFICATE. STUDENTS ARE EXPECTED TO APPLY ONE SEMESTER PRIOR TO THE SEMESTER THEY INTEND TO GRADUATE.

**COMPUTER REPAIR TECHNICIAN
CERTIFICATE OF ACHIEVEMENT**

Curriculum Code: 0168 (Effective Fall 2001–Summer 2006)

This program provides technical knowledge and skills to repair and service computers, test computers and computer components, and diagnose causes of malfunctions. Individuals are prepared for entry-level positions.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

INFORMATION

Contact the Technology Careers Department, Gannon Vocational-Technical Center, Room 1380, telephone number (517) 483-1336.

REQUIREMENTS

TOTAL: 25 CREDITS

CODE	TITLE	CREDIT HOURS
ELCT 100	Schematic Drawing	1
ELCT 151	Computer Troubleshooting	3
ELCT 160	Logic Problems Analysis	3
ELCT 161	Soldering/Desoldering	1
ELCT 170	Computer Repair Electronics I	6
ELCT 171	Computer Repair Electronics II	6
ELCT 180	Computer Test Equipment I	3
ELCT 181	Computer Test Equipment II	2

LIMITED CHOICE REQUIREMENTS

TOTAL: 6–7 CREDITS

Complete the indicated number of credits from *each CHOICE* listed below.

CHOICE 1: Software

3 Credits

CABS 195	Microsoft Windows	2
CISB 107	DOS Management	1
CISB 130	Data Communications	3
CISB 133	Operating Systems	3
CISB 230	Intro to Local Area Networks	3
ELCT 120	Programming Preparation	2

CHOICE 2: Communication

3–4 Credits

SPCH 110	Oral Communic in the Workplace	3
WRIT 117	Writing Preparation	4
WRIT 124	Technical Writing	3

MINIMUM TOTAL

31

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II
ELCT 100	ELCT 151
ELCT 160	ELCT 171
ELCT 161	ELCT 181
ELCT 170	Lim.Ch.
ELCT 180	Lim.Ch.
Lim.Ch.	

**COMPUTER SECURITY AND CONTROLS
ASSOCIATE IN BUSINESS DEGREE**

Curriculum Code: 0253 (Effective Fall 2001–Summer 2006)

Computer auditors plan and conduct audits of data processing systems and applications to safeguard assets, ensure accuracy of data, and promote operational efficiency. They may interview workers and examine records to gather data by following an audit plan and using the computer. They analyze data gathered to evaluate effectiveness of controls and determine accuracy of reports and efficiency and security of operations. They devise, write, and test computer programs necessary to obtain information needed for audit. They devise controls for new or modified computer applications to prevent inaccurate calculations and data loss, and to ensure discovery of errors.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Business Careers Department, Old Central Building, Room 210, telephone number (517) 483-1522.

REQUIREMENTS

TOTAL: 50 CREDITS

CODE	TITLE	CREDIT HOURS
ACCG 210	Principles of Accounting I	4
ACCG 211	Principles of Accounting II	4
ACCG 220	Intermediate Accounting I	4
ACCG 221	Intermediate Accounting II	4
ACCG 290	Auditing	3
CISB 100	Intro Computer Info Systems	3
CISB 114	Programming Logic	3
CISB 130	Data Communications	3
CISB 133	Operating Systems	3
CISB 136	SQL: Structured Query Language	2
CISB 170	COBOL I	4
CISB 230	Intro to Local Area Networks	3
CISB 250	Database Concepts	3
CISB 260	Systems Analysis and Design	4
CISB 270	COBOL II	3

LIMITED CHOICE REQUIREMENTS

TOTAL: 12 CREDITS

Complete the indicated number of credits from *each CHOICE* listed below.

CHOICE 1: General Education Core Areas **12 Credits**
(See the *GENERAL EDUCATION* section above)

Writing Core Area	3
Speech Communication Core Area	3
Science/Technology Core Area	3
Global Perspectives and Diversity Core Area	3
Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)	

MINIMUM TOTAL **62**

NOTE:

- For graduation, a student must have earned a minimum 2.0 grade point average in courses with a CISB and ACCG prefix.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
ACCG 210	ACCG 211	ACCG 220	ACCG 221
CISB 100	CISB 130	CISB 133	CISB 250
CISB 114	CISB 170	CISB 230	Lim.Ch.
CISB 136	CISB 260	CISB 270	Lim.Ch.
Lim.Ch.		Lim.Ch.	
V			
ACCG 290			

STUDENTS ARE RESPONSIBLE FOR COMPLETING ALL REQUIREMENTS AS STATED. THE ONLY OFFICIAL DOCUMENTATION OF PROGRAM COMPLETION STATUS IS AN AUDIT CONDUCTED BY THE REGISTRAR'S OFFICE THAT IS INITIATED WHEN STUDENTS APPLY FOR A DEGREE OR CERTIFICATE. STUDENTS ARE EXPECTED TO APPLY ONE SEMESTER PRIOR TO THE SEMESTER THEY INTEND TO GRADUATE.

**ELECTRONICS, COMPUTER TECH
ASSOCIATE IN APPLIED SCIENCE DEGREE**

Curriculum Code: 0743 (Effective Fall 2001--Summer 2006)

A computer service technician is highly knowledgeable in both computer hardware and software. This person must not only understand the operation of the computer system, but must also diagnose and repair the system when it fails, make upgrades and perform preventive maintenance. A computer service technician also answers customers' questions relating to correct use of computers or components and may install new equipment. A successful computer service technician must understand electronics, computer hardware and software, and how they work together to make the computer operate. Computer service technicians are employed in computer sales and service shops and any place a large number of computers are found. **Not all courses in this program transfer to all colleges.** Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Technology Careers Department, Gannon Vocational-Technical Center, Room 1380, telephone number (517) 483-1336.

REQUIREMENTS TOTAL: 59 CREDITS

CODE	TITLE	CREDIT HOURS
CABS 133	Microsoft Access Database	2
CABS 195	Microsoft Windows	2
CISB 107	DOS Management	1
CISB 114	Programming Logic	3
CISB 130	Data Communications	3
CISB 133	Operating Systems	3
CISB 200	Info Sys Tech/Problem Solving	3
CISB 230	Intro to Local Area Networks	3
CISB 231	Advanced Local Area Networks	3
CISB 236	Microcomputer Software Support	3
ELCT 100	Schematic Drawing	1
ELCT 120	Programming Preparation	2
ELCT 151	Computer Troubleshooting	3
ELCT 160	Logic Problems Analysis	3
ELCT 161	Soldering/Desoldering	1
ELCT 170	Computer Repair Electronics I	6
ELCT 171	Computer Repair Electronics II	6
ELCT 180	Computer Test Equipment I	3
ELCT 181	Computer Test Equipment II	2
SPCH 110	Oral Communic in the Workplace	3
WRIT 124	Technical Writing	3

LIMITED CHOICE REQUIREMENTS TOTAL: 7 CREDITS

Complete the indicated number of credits from *each CHOICE* listed below.

CHOICE 1: General Education Core Areas 3 Credits

(See the *GENERAL EDUCATION* section above)

Writing Core Area (See Note 1)	0
Speech Communication Core Area (See Note 1)	0
Science/Technology Core Area (See Note 1)	0
Global Perspectives and Diversity Core Area	3
Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)	

CHOICE 2: Word Processing 2 Credits

CABS 119	Word for Windows	2
CABS 121	WordPerfect for Windows	2

CHOICE 3: Spreadsheet 2 Credits		
CABS 126	Excel	2
CABS 128	Lotus 1-2-3 for Windows	2

MINIMUM TOTAL 66

NOTES:

1. Students completing *REQUIREMENTS* have fulfilled the requirements for this Core area.
2. Students interested in specializing in microcomputer software support should review the curriculum guide for Microcomp Support Specialist. #10713.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
ELCT 100	CISB 114	CABS 195	CABS 133
ELCT 120	CISB 130	CISB 107	CISB 133
ELCT 160	ELCT 151	CISB 200	CISB 231
ELCT 161	ELCT 171	CISB 230	CISB 236
ELCT 170	ELCT 181	WRIT 124	Lim.Ch.
ELCT 180		Lim.Ch.	
SPCH 110		Lim.Ch.	

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**INFORMATION TECHNOLOGY BASICS
CERTIFICATE OF COMPLETION**

Curriculum Code: 0844 (Effective Fall 2001–Summer 2006)

This certificate provides the basic classes for Computer Information Systems Associate in Business degrees. Students will learn introductory concepts of computer usage in business. This course work will apply toward completion of an Associate Degree in Business in the areas of Computer Networking/Communications, Microcomputer Database Specialist, or Computer Programmer/Analyst.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

INFORMATION

Contact the Business Careers Department, Old Central Building, Room 210, telephone number (517) 483-1522.

REQUIREMENTS		TOTAL: 17 CREDITS
CODE	TITLE	CREDIT HOURS
CABS 195	Microsoft Windows	2
CISB 100	Intro Computer Info Systems	3
CISB 114	Programming Logic	3
CISB 130	Data Communications	3
CISB 133	Operating Systems	3
CISB 200	Info Sys Tech/Problem Solving	3

LIMITED CHOICE REQUIREMENTS TOTAL: 3-4 CREDITS
Complete the indicated number of credits from *each CHOICE* listed below.

CHOICE 1:	Writing	
WRIT 121	Composition I	4
WRIT 124	Technical Writing	3

MINIMUM TOTAL 20

NOTES:

- Students must complete each CABS and CISB course with a minimum grade of 2.0 to receive this certificate of completion.
- This curriculum may be completed through the Virtual College via the Internet.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II
CABS 195	CISB 133
CISB 100	CISB 200
CISB 114	Lim. Ch.
CISB 130	

**INTERNET FOR BUSINESS
CERTIFICATE OF ACHIEVEMENT**

Curriculum Code: 0794 (Effective Fall 2001–Summer 2006)

This program provides students with technical knowledge and skills to use the Internet, the global network which links computer users and information on a world-wide scale. Students will learn how to maximize the use of Internet and World Wide Web resources. Emphasis in this program is on business applications. This course work will apply toward completion of the Computer Network/Communication Associate in Business Degree.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

INFORMATION

Contact the Business Careers Department, Old Central Building, Room 210, telephone number (517) 483-1522.

REQUIREMENTS		TOTAL: 21 CREDITS
CODE	TITLE	CREDIT HOURS
CABS 195	Microsoft Windows	2
CISB 100	Intro Computer Info Systems	3
CISB 102	Internet Literacy	3
CISB 119	Intro Window Prog Visual BASIC	4
CISB 130	Data Communications	3
CISB 203	Developing Pages for the Web	3
CISB 204	Commercial Internet Site Mgmt	3

LIMITED CHOICE REQUIREMENTS TOTAL: 12-14 CREDITS
Complete the indicated number of credits from *each CHOICE* listed below.

CHOICE 1:	Programming	3-4 Credits
CISB 253	WWW Interactive Programming	4
CISB 283	Intro to JAVA Programming	3

CHOICE 2:	Speech Communication	3 Credits
SPCH 110	Oral Communic in the Workplace	3
SPCH 120	Dynamics of Communication	3

CHOICE 3:	Writing (See Note 2)	3-4 Credits
WRIT 121	Composition I	4
WRIT 124	Technical Writing	3

CHOICE 4:	Global Perspectives (See Note 3)	3 Credits
MGMT-234	Diversity in the Workplace	3
OADM 275	Cultural Differences in Busn	3

MINIMUM TOTAL 33

NOTE:

- For graduation from this program, a student must have earned a minimum 2.0 grade in each course with CABS and CISB prefixes.
- Students completing Choice 3 will fulfill the LCC General Education Writing Core requirement for an associate degree.
- Students completing Choice 4 will fulfill the LCC General Education Global Perspectives and Diversity Core requirement for an associate degree.
- This curriculum may be completed through the Virtual College via the Internet.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III
CABS 195	CISB 130	CISB 204
CISB 100	CISB 203	Lim.Ch.
CISB 102	Lim.Ch.	Lim.Ch.
CISB 119		Lim.Ch.

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**INTERNET FOR BUSINESS
CERTIFICATE OF COMPLETION**

Curriculum Code: 0843 (Effective Fall 2001–Summer 2006)

This certificate provides students with the technical skills necessary to use the Internet as an effective business resource, including building and maintaining commercial web-sites. It is designed for students who already have basic computer skills and want to specialize in Internet and web-programming. This course work will apply toward completion of the Computer Networking/Communications Associate in Business degree.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

INFORMATION

Contact the Business Careers Department, Old Central Building, Room 210, telephone number (517) 483-1522.

REQUIREMENTS**TOTAL: 13 CREDITS**

CODE	TITLE	CREDIT HOURS
CISB 102	Internet Literacy	3
CISB 119	Intro Windows Prog Visual BASIC	4
CISB 203	Developing Pages for the Web	3
CISB 204	Commercial Internet Site Mgmt	3

LIMITED CHOICE REQUIREMENTS**TOTAL: 6-7 CREDITS**

Complete the indicated number of credits from *each CHOICE* listed below.

CHOICE 1:	Programming Elective	3-4 Credits
CISB 253	WWW Interactive Programming	4
CISB 283	Intro to JAVA Programming	3

CHOICE 2:	Global Awareness	3 Credits
MGMT 234	Diversity in the Workplace	3
OADM 275	Cultural Differences in Busn	3

MINIMUM TOTAL 19**NOTES:**

- Prerequisites may be waived based on experience. See a CIS program advisor prior to registration for more information.
- Students must complete each CISB course with a minimum grade of 2.0 to receive this certificate of completion.
- This curriculum may be completed through the Virtual College via the Internet.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II
CISB 102	CISB 203
CISB 119	CISB 204
Lim.Ch.	Lim.Ch.

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**MICROCOMP DATABASE SPECIALIST
ASSOCIATE IN BUSINESS DEGREE**

Curriculum Code: 0922 (Effective Fall 2001–Summer 2006)

As the Information Age matures, decisions at all levels of an organization are based upon relevant information. Organizations seek specialists who can plan for and accomplish the acquisition and retrieval of needed information. These specialists must be able to determine information requirements of users; use technology systems and processes to devise means through which to gather and sort needed information; and implement effective solutions for reporting necessary information using industry-standard database tools. Even in large organizations, these solutions frequently involve the use of microcomputers to create the required input screens or output reports. Data for these systems can come from a networked and/or stand-alone environment. **Not all courses in this program transfer to all colleges.** Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Business Careers Department, Old Central Building, Room 210, telephone number (517) 483-1522.

REQUIREMENTS

TOTAL: 44 CREDITS

CODE	TITLE	CREDIT HOURS
CABS 133	Microsoft Access Database	2
CABS 232	Advanced Microsoft Access	2
CISB 100	Intro Computer Info Systems	3
CISB 114	Programming Logic	3
CISB 119	Intro Window Prog Visual BASIC	4
CISB 122	Adv Windows Prog Visual BASIC	3
CISB 130	Data Communications	3
CISB 133	Operating Systems	3
CISB 136	SQL: Structured Query Language	2
CISB 143	ORACLE Database for Business	2
CISB 200	Info Sys Tech/Problem Solving	3
CISB 230	Intro to Local Area Networks	3
CISB 250	Database Concepts	3
CISB 251	Database Design	4
CISB 260	Systems Analysis and Design	4

LIMITED CHOICE REQUIREMENTS

TOTAL: 20–22 CREDITS

Complete the indicated number of credits from *each CHOICE* listed below.

CHOICE 1: General Education Core Areas 3 Credits
(See the *GENERAL EDUCATION* section above)

Writing Core Area (See Note 1)	0
Speech Communication Core Area	3
Science/Technology Core Area (See Note 2)	0
Global Perspectives and Diversity Core Area (See Note 3)	0
Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)	0

CHOICE 2: Writing 3–4 Credits

WRIT 121	Composition 1	4
WRIT 124	Technical Writing	3

CHOICE 3: Global Perspectives 3 Credits

MGMT 234	Diversity in the Workplace	3
QADM 275	Cultural Differences in Busn	3

CHOICE 4: Computer Speciality Area (See Note 4) 9 Credits

CABS 195	Microsoft Windows	2
CABS 234	Programming Microsoft Access	2
CISB 102	Internet Literacy	3
CISB 104	Introduction to DOS	1
CISB 203	Developing Pages for the Web	3
CISB 204	Commercial Internet Site Mgmt	3
CISB 231	Advanced Local Area Networks	3
CISB 235	Microcomputer Hardware Support	3
CISB 236	Microcomputer Software Support	3
CISB 253	WWW Interactive Programming	4

CHOICE 5: Computer Related 2–3 Credits

CISB 245	Programming Internship	3
CISB 247	Microcomputer Project	2

MINIMUM TOTAL 64

NOTES:

1. Students must complete one course from Choice 2 to fulfill the requirements for this Core area.
2. Students completing *REQUIREMENTS* have fulfilled the requirements for this Core area.
3. Students must complete one course from Choice 3 to fulfill the requirements for this Core area.
4. Other CABS or CISB-prefix courses may be approved for Choice 4 by a Computer Information Systems Academic Program advisor.
5. For graduation, a student must have earned a minimum 2.0 grade in all courses.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
CABS 133	CABS 232	CISB 119	CISB 122
CISB 100	CISB 130	CISB 200	CISB 251
CISB 114	CISB 133	CISB 230	CISB 260
CISB 136	CISB 143	CISB 250	Lim.Ch.4
Lim.Ch.1	Lim.Ch.3	Lim.Ch.4	Lim.Ch.5
Lim.Ch.2		Lim.Ch.4	

STUDENTS ARE RESPONSIBLE FOR COMPLETING ALL REQUIREMENTS AS STATED. THE ONLY OFFICIAL DOCUMENTATION OF PROGRAM COMPLETION STATUS IS AN AUDIT CONDUCTED BY THE REGISTRAR'S OFFICE THAT IS REPORTED WHEN STUDENTS APPLY FOR A DEGREE OR CERTIFICATE. STUDENTS ARE EXPECTED TO APPLY ONE SEMESTER PRIOR TO THE SEMESTER THEY INTEND TO GRADUATE.

**MICROCOMP DATABASE SPECIALIST
CERTIFICATE OF ACHIEVEMENT**

Curriculum Code: 0917 (Effective Fall 2001–Summer 2006)

Certificate holders may qualify for entry level/hands-on positions in this or a related area. Additional training will enhance individual employment and advancement opportunities.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

INFORMATION

Contact the Business Careers Department, Old Central Building, Room 210, telephone number (517) 483-1522.

REQUIREMENTS**TOTAL: 31 CREDITS**

CODE	TITLE	CREDIT HOURS
CABS 133	Microsoft Access Database	2
CABS 195	Microsoft Windows	2
CABS 232	Advanced Microsoft Access	2
CABS 234	Programming Microsoft Access	2
CISB 100	Intro Computer Info Systems	3
CISB 104	Introduction to DOS	1
CISB 114	Programming Logic	3
CISB 130	Data Communications	3
CISB 136	SQL: Structured Query Language	2
CISB 143	ORACLE Database for Business	2
CISB 200	Info Sys Tech/Problem Solving	3
CISB 230	Intro to Local Area Networks	3
CISB 250	Database Concepts	3
MINIMUM TOTAL		31

NOTE:

- For graduation, a student must have earned a minimum 2.0 grade in all courses.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	#
CABS 133	CABS 232
CABS 195	CABS 234
CISB 100	CISB 143
CISB 104	CISB 200
CISB 114	CISB 230
CISB 130	CISB 250
CISB 136	

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**MICROCOMP SUPPORT SPECIALIST
ASSOCIATE IN BUSINESS DEGREE**

Curriculum Code: 0713 (Effective Fall 2001--Summer 2006)

Microcomputer support specialists install, modify and make minor repairs to microcomputer hardware and software systems and provide technical assistance and training to system users. They install or assist service personnel in installation of hardware and peripheral components, such as monitors, keyboards, printers, and disk drives on user's premises, following design or installation specifications. They may also load software packages into the computer; instruct users in use of equipment, software, and manuals; answer clients' inquiries concerning the systems operation; and diagnose system hardware, software, and operator problems.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Business Careers Department Office, Old Central Building, Room 210, telephone number 483-1522.

REQUIREMENTS

TOTAL: 42 CREDITS

CODE	TITLE	CREDIT HOURS
CABS 126	Excel	2
CABS 129	Excel-Advanced	2
CABS 133	Microsoft Access Database	2
CABS 182	Microsoft PowerPoint/Windows	2
CABS 195	Microsoft Windows	2
CABS 232	Advanced Microsoft Access	2
CABS 234	Programming Microsoft Access	2
CISB 100	Intro Computer Info Systems	3
CISB 102	Internet Literacy	3
CISB 119	Intro Window Prog Visual BASIC	4
CISB 130	Data Communications	3
CISB 133	Operating Systems	3
CISB 200	Info Sys Tech/Problem Solving	3
CISB 230	Intro to Local Area Networks	3
CISB 235	Microcomputer Hardware Support	3
CISB 236	Microcomputer Software Support	3

LIMITED CHOICE REQUIREMENTS

TOTAL: 18-23 CREDITS

Complete the indicated number of credits from *each CHOICE* listed below.

CHOICE 1: General Education Core Areas	3 Credits
<i>(See the GENERAL EDUCATION section above)</i>	
Writing Core Area <i>(See Note 1)</i>	0
Speech Communication Core Area	3
Science/Technology Core Area <i>(See Note 2)</i>	0
Global Perspectives and Diversity Core Area <i>(See Note 3)</i>	0
Mathematics Competency <i>(See page 23 for information on how to fulfill this requirement. Course work may be needed.)</i>	
CHOICE 2: Writing	3-4 Credits
WRIT 121 Composition I	4
WRIT 124 Technical Writing	3
CHOICE 3: Global Perspectives	3 Credits
MGMT 234 Diversity in the Workplace	3
OADM 275 Cultural Differences in Busn	3
CHOICE 4: Word Processing	4-5 Credits
CABS 119 Word for Windows	2
CABS 180 Desktop Publishing Pagemaker	3
CABS 219 Advanced Microsoft Word	2

CHOICE 5: Computer Related	(See Note 4)	2-4 Credits
CISB 203	Developing Pages for the Web	3
CISB 231	Advanced Local Area Networks	3
CISB 247	Microcomputer Project	2
CISB 250	Database Concepts	3
CISB 260	Systems Analysis and Design	4

CHOICE 6: Accounting		3-4 Credits
ACCG 100	Practical Accounting Non-Major	3
ACCG 210	Principles of Accounting I	4

MINIMUM TOTAL 60

NOTES:

- Students must complete one course from Choice 2 to fulfill the requirements for this Core area.
- Students completing *REQUIREMENTS* have fulfilled the requirements for this Core area.
- Students must complete one course from Choice 3 to fulfill the requirements for this Core area.
- Students may also select from any course with a CABS or CISB prefix not already used to meet degree requirements.
- For graduation, a student must have earned a minimum 2.0 grade in each course with a CABS and CISB prefix.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
CABS 126	CABS 129	CABS 232	CISB 230
CABS 182	CABS 133	CABS 234	CISB 235
CABS 195	CISB 102	CISB 130	CISB 236
CISB 100	CISB 119	CISB 133	Lim.Ch.
Lim.Ch.	Lim.Ch.	CISB 200	Lim.Ch.
	Lim.Ch.	Lim.Ch.	Lim.Ch.

STUDENTS ARE RESPONSIBLE FOR COMPLETING ALL REQUIREMENTS AS STATED. THE ONLY OFFICIAL DOCUMENTATION OF PROGRAM COMPLETION STATUS IS AN AUDIT CONDUCTED BY THE REGISTRAR'S OFFICE THAT IS INITIATED WHEN STUDENTS APPLY FOR A DEGREE OR CERTIFICATE. STUDENTS ARE EXPECTED TO APPLY ONE SEMESTER PRIOR TO THE SEMESTER THEY INTEND TO GRADUATE.

**MOUS MASTER CERTIFICATION PREP
CERTIFICATE OF COMPLETION**

Curriculum Code: 0841 (Effective Fall 2001–Summer 2006)

This certificate will prepare students for the Microsoft Office User Specialist exam. A comprehensive Master Certification exam is available from Microsoft for those who wish to demonstrate the breadth of their ability by obtaining expert certifications on Word and Excel, and core certifications in PowerPoint, Access, and Outlook.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

INFORMATION

Contact the Business Careers Department, Old Central Building, Room 210, telephone number (517) 483-1522.

REQUIREMENTS

TOTAL: 14 CREDITS

CODE	TITLE	CREDIT HOURS
CABS 119	Word for Windows	2
CABS 126	Excel	2
CABS 129	Excel-Advanced	2
CABS 133	Microsoft Access Database	2
CABS 179	Microsoft Outlook	2
CABS 182	Microsoft PowerPoint/Windows	2
CABS 219	Advanced Microsoft Word	2

MINIMUM TOTAL 14

NOTES:

1. Students must complete these courses with a minimum grade of 2.0 to receive this certificate of completion.
2. This curriculum may be completed through the Virtual College via the Internet.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

- I
- CABS 119
- CABS 126
- CABS 129
- CABS 133
- CABS 179
- CABS 182
- CABS 219

**PC PRODUCTIVITY APPLICATIONS
CERTIFICATE OF COMPLETION**

Curriculum Code: 0765 (Effective Fall 2001–Summer 2006)

This certificate of completion is designed for students with previous experience in the Computer Information Systems field and who wish to upgrade their skills in the area of Productivity Applications.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

INFORMATION

Contact the Business Careers Department, Old Central Building, Room 210, telephone number (517) 483-1522.

REQUIREMENTS

TOTAL: 21 CREDITS

CODE	TITLE	CREDIT HOURS
CABS 119	Word for Windows	2
CABS 126	Excel	2
CABS 129	Excel-Advanced	2
CABS 133	Microsoft Access Database	2
CABS 182	Microsoft PowerPoint/Windows	2
CABS 195	Microsoft Windows	2
CABS 219	Advanced Microsoft Word	2
CABS 232	Advanced Microsoft Access	2
CABS 234	Programming Microsoft Access	2
CISB 114	Programming Logic	3

MINIMUM TOTAL 21

NOTE:

1. A minimum of 2.0 grade is each course with a CABS or CISB prefix is required.
2. This curriculum may be completed through the Virtual College via the Internet.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

- I
- CABS 119
- CABS 126
- CABS 133
- CABS 195
- CISB 114
- II
- CABS 129
- CABS 182
- CABS 219
- CABS 232
- CABS 234

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**PC USER SUPPORT
CERTIFICATE OF COMPLETION**

Curriculum Code: 0766 (Effective Fall 2001–Summer 2006)

This certificate of completion is designed for students with previous experience in the Computer Information Systems field and who wish to update their skills in the area of Microcomputer Support.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

INFORMATION

Contact the Business Careers Department, Old Central Building, Room 210, telephone number (517) 483-1522.

REQUIREMENTS

CODE	TITLE	CREDIT HOURS	TOTAL: 20 CREDITS
CABS 195	Microsoft Windows	2	
CISB 130	Data Communications	3	
CISB 200	Info Sys Tech/Problem Solving	3	
CISB 230	Intro to Local Area Networks	3	
CISB 231	Advanced Local Area Networks	3	
CISB 235	Microcomputer Hardware Support	3	
CISB 236	Microcomputer Software Support	3	
MINIMUM TOTAL			20

NOTE:

1. A minimum 2.0 grade in each course with a CABS or CISB prefix is required.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II
CABS 195	CISB 200
CISB 130	CISB 231
CISB 230	CISB 236
CISB 235	

**WINDOWS PROGRAMMING
CERTIFICATE OF COMPLETION**

Curriculum Code: 0763 (Effective Fall 2001–Summer 2006)

This certificate of completion is designed for students with previous experience in the Computer Information Systems field and who wish to update their skills for programming in the Windows environment.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

INFORMATION

Contact the Business Careers Department, Old Central Building, Room 210, telephone number (517) 483-1522.

REQUIREMENTS

CODE	TITLE	CREDIT HOURS	TOTAL: 12 CREDITS
CABS 195	Microsoft Windows	2	
CISB 119	Intro Window Prog Visual BASIC	4	
CISB 122	Adv Windows Prog Visual BASIC	3	
CISB 281	Visual C++ Programming	3	

LIMITED CHOICE REQUIREMENTS

TOTAL: 3-4 CREDITS

Complete the indicated number of credits from *each* CHOICE listed below.

CHOICE 1:	Multimedia	3-4 Credits
CISB 203	Developing Pages for the Web	3
CISB 253	WWW Interactive Programming	4
CISB 283	Intro to JAVA Programming	3

MINIMUM TOTAL

15

NOTE:

1. A minimum 2.0 grade in each course with a CABS or CISB prefix is required.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III
CABS 195	CISB 122	CISB 281
CISB 119	Lim. Ch.	

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**RESIDENTIAL BUILDING
ASSOCIATE IN APPLIED SCIENCE DEGREE**

Curriculum Code: 0167 (Effective Fall 2001–Summer 2006)

This program prepares an individual to build single family structures and multiple housing buildings such as apartments and condominiums. A residential builder must have basic math skills, understand construction methods and techniques, and know the proper use of construction materials. They must also have significant knowledge of blueprint reading, estimating, code requirements, and small business administration and management. Students will be prepared to obtain a Residential Builder's License or a Maintenance and Alteration Contractor's License. This program also assists students in preparing for the Michigan Builder's License Exam which is administered by the National Assessment Institute and the State of Michigan. This program *does not* lead to journeyman status.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Technology Careers Department, Gannon Vocational-Technical Center, Room 1380, telephone number (517) 483-1336.

REQUIREMENTS

TOTAL: 46 CREDITS

CODE	TITLE	CREDIT HOURS
ARCH 271	Structural Theory	4
ARCH 278	Building Science	4
BLDT 100	Introduction to Construction	3
BLDT 103	Structural Blueprint Reading	4
BLDT 121	Residential Framing	4
BLDT 124	Remodeling, Shingling/Siding	4
BLDT 126	Interior Carpentry	4
BLDT 262	Builder's Business License	4
BLDT 277	Construction Cost Estimating	4
BLDT 281	International Building Code	3
MATH 114	Technical Math I	4
MATH 115	Technical Math II	4

LIMITED CHOICE REQUIREMENTS

TOTAL: 18 CREDITS

Complete the indicated number of credits from each CHOICE listed below.

CHOICE 1: General Education Core Areas 12 Credits

(See the *GENERAL EDUCATION* section above)

Writing Core Area	3
Speech Communication Core Area	3
Science/Technology Core Area	3
Global Perspectives and Diversity Core Area	3
Mathematics Competency (See Note 1)	

CHOICE 2: Building/Business Related 6 Credits

ACCG 100	Practical Accounting Non-Major	3
ARCH 283	Materials of Construction	4
BLDT 101	Basic Woodworking	2
BLDT 285	Residential Building Intern	2
BUSN 118	Introduction to Business	3
CIVL 120	Surveying	4

MINIMUM TOTAL 64

NOTE:

- Students completing *REQUIREMENTS* have fulfilled the requirements for this Core area.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
BLDT 100	ARCH 278	BLDT 126	ARCH 271
BLDT 103	BLDT 124	BLDT 277	BLDT 262
BLDT 121	MATH 115	Lim.Ch.	BLDT 281
MATH 114	Lim.Ch.	Lim.Ch.	Lim.Ch.
Lim.Ch.	Lim.Ch.		

**RESIDENTIAL BUILDING
CERTIFICATE OF ACHIEVEMENT**

Curriculum Code: 0135 (Effective Fall 2001–Summer 2006)

This certificate consists of practical hands-on courses that prepare an individual for the job market with just one year of training. This program *does not* lead to journey status.

REQUIREMENTS

TOTAL: 30 CREDITS

CODE	TITLE	CREDIT HOURS
BLDT 100	Introduction to Construction	3
BLDT 103	Structural Blueprint Reading	4
BLDT 121	Residential Framing	4
BLDT 124	Remodeling, Shingling/Siding	4
BLDT 126	Interior Carpentry	4
BLDT 277	Construction Cost Estimating	4
BLDT 281	International Building Code	3
MATH 050	Math-Principles and Practices	4

MINIMUM TOTAL 30

SUGGESTED COURSE SEQUENCE

I	II
BLDT 100	BLDT 103
BLDT 121	BLDT 124
BLDT 126	BLDT 277
MATH 050	BLDT 281

**CREDIT UNION MANAGEMENT
ASSOCIATE IN BUSINESS DEGREE**

Curriculum Code: 0103 (Effective Fall 2001–Summer 2006)

A credit union manager is responsible for the smooth and efficient functioning of the organization and is responsible to the members of that credit union. Handling money and confidential information, credit union managers make decisions in accordance with policy set by the institution's board of directors and federal and state laws and regulations. Graduates of this program are prepared to work in various types and sizes of credit unions and other financial institutions.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Business Careers Department, Old Central Building, Room 210, telephone number (517) 483-1522.

REQUIREMENTS		TOTAL: 40 CREDITS
CODE	TITLE	CREDIT HOURS
ACCG 210	Principles of Accounting I	4
BUSN 118	Introduction to Business	3
CISB 200	Info Sys Tech/Problem Solving	3
CUAI 102	Credit Union Accounting	3
CUMA 100	Intro Credit Union Operations	3
CUMA 200	Credit and Collections	3
CUMA 215	Business Law for Credit Unions	3
MGMT 224	Human Resource Management	3
MGMT 225	Principles of Management	3
MGMT 234	Diversity in the Workplace	3
MKTG 200	Principles of Marketing	3
SPCH 110	Oral Communic in the Workplace	3
WRIT 127	Business Writing	3

LIMITED CHOICE REQUIREMENTS TOTAL: 21–22 CREDITS
Complete the indicated number of credits from *each* CHOICE listed below.

CHOICE 1: General Education Core Areas	0 Credits
(See the <i>GENERAL EDUCATION</i> section above)	
Writing Core Area (See Note 1)	0
Speech Communication Core Area (See Note 1)	0
Science/Technology Core Area (See Note 1)	0
Global Perspectives and Diversity Core Area (See Note 1)	0
Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)	

CHOICE 2: Management Related (See Note 2)	17 Credits	
ACCG 211	Principles of Accounting II	4
BUSN 201	International Business	3
BUSN 250	Personal Finance	3
ECON 201	Principles of Economics-Micro	3
ECON 202	Principles of Economics-Macro	3
INSU 265	Principles Risk and Insurance	3
LABR 200	Intro to Labor Relations	3
LABR 204	Employment Law for Managers	3
MATH 117	Math for Business	4
MGMT 150	Managing Customer Relations	3
MGMT 228	Organizational Behavior	3
MGMT 237	Managing/Continual Improvement	3
MGMT 239	Time Management	3
MGMT 304	Organizational Development	3
MGMT 337	Human Resource Mgmt Skills	3
MKTG 119	Mktg/Manage Your Profess Image	3
MKTG 221	Consumer Behavior	2
REAL 275	Real Estate Financing	3

CHOICE 3: Computer Related (See Note 3) 4–5 Credits
MINIMUM TOTAL 61

NOTES:

1. Students completing *REQUIREMENTS* have fulfilled the requirements for this Core area.
2. Students should confer with a Business Careers program advisor to assure that selection of Limited Choice courses will best fit their career plans.
3. Choose CABS-prefix courses of 110 or above and/or CISB-prefix courses of 100 or above not already used to meet degree requirements.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
BUSN 118	CUMA 200	ACCG 210	CUAI 102
CUMA 100	MGMT 234	CISB 200	MGMT 224
SPCH 110	MKTG 200	CUMA 215	MGMT 225
WRIT 127	Lim.Ch.	Lim.Ch.	Lim.Ch.
Lim.Ch.	Lim.Ch.	Lim.Ch.	Lim.Ch.

**CREDIT UNION MANAGEMENT
CERTIFICATE OF COMPLETION**

Curriculum Code: 0151 (Effective Fall 2001–Summer 2006)

Certificate holders may improve their opportunities for advancement in this or a related area. Additional education enhances an individual's employment opportunities.

REQUIREMENTS		TOTAL: 18 CREDITS
CODE	TITLE	CREDIT HOURS
CUAI 102	Credit Union Accounting	3
CUMA 100	Intro Credit Union Operations	3
CUMA 200	Credit and Collections	3
CUMA 215	Business Law for Credit Unions	3
MGMT 224	Human Resource Management	3
MGMT 225	Principles of Management	3

LIMITED CHOICE REQUIREMENTS TOTAL: 3 CREDITS
Complete the indicated number of credits from *each* CHOICE listed below.

CHOICE 1: Communication	3 Credits	
MGMT 234	Diversity in the Workplace	3
MKTG 200	Principles of Marketing	3
SPCH 110	Oral Communic in the Workplace	3
WRIT 127	Business Writing	3

MINIMUM TOTAL 21

SUGGESTED COURSE SEQUENCE

I	II
CUAI 102	CUMA 200
CUMA 100	CUMA 215
MGMT 224	MGMT 225
Lim.Ch.	

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**CORRECTIONAL OFFICER
CERTIFICATE OF COMPLETION**

Curriculum Code: 0840 (Effective Fall 2001--Summer 2006)

This certificate option is designed to provide entry level skills for the person who wishes to enter the job market as a State Correctional Officer at a correctional facility. This curriculum meets the State of Michigan Corrections Officer Vocational Certificate requirements.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

INFORMATION

Contact the Criminal Justice and Law Center, Old Central Building, Room 232, telephone number (517) 483-1570.

REQUIREMENTS

TOTAL: 15 CREDITS

CODE	TITLE	CREDIT HOURS
CJUS 131	Introduction to Corrections	3
CJUS 135	Legal Issues in Corrections	3
CJUS 250	Correctional Institutions	3
CJUS 251	Correctional Clients	3
CJUS 255	Human Relations/Criminal Just	3

MINIMUM TOTAL 15

NOTES:

- Students must complete each of these courses with a minimum 2.0 grade to receive this certificate of completion as well as the Michigan Corrections Officer Vocational Certificate.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II
CJUS 131	CJUS 135
CJUS 250	CJUS 251
	CJUS 255

**COUNTY/LOCAL DETENTION OFFICER
CERTIFICATE OF COMPLETION**

Curriculum Code: 0833 (Effective Fall 2001--Summer 2006)

This certificate option is designed to provide entry level skills for the person who wishes to enter the job market as a county or local correctional officer. This curriculum meets the County and Local Detention Vocational Certificate requirements.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

INFORMATION

Contact Criminal Justice and Law Center, Old Central Building, Room 232, telephone number (517) 483-1570.

REQUIREMENTS

TOTAL: 26 CREDITS

CODE	TITLE	CREDIT HOURS
CJUS 130	Local Detention	3
CJUS 135	Legal Issues in Corrections	3
CJUS 242	Unarmed Defense	3
CJUS 245	Report Writing in CJ	2
CJUS 246	Jail Safety and I.D. Issues	4
CJUS 251	Correctional Clients	3
CJUS 255	Human Relations/Criminal Just	3
CJUS 256	Interpersonal Comm in Jails	1
WRIT 117	Writing Preparation (See Note 2)	4

MINIMUM TOTAL 26

NOTES:

- Students must complete each of these courses with a minimum 2.0 grade to receive this certificate of achievement as well as the County and Local Detention Officer Vocational Certificate.
- This course will be waived if student scores five or above on the Writing Placement Test. This test is administered free of charge in the Assessment Center, Room 2100, Gannon Vocational-Technical Center.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II
CJUS 130	CJUS 135
CJUS 242	CJUS 245
CJUS 255	CJUS 246
WRIT 117	CJUS 251
	CJUS 256

**CRIMINAL JUSTICE, CORRECTIONS
ASSOCIATE IN BUSINESS DEGREE**

Curriculum Code: 0170 (Effective Fall 2001–Summer 2006)

This degree program prepares an individual for a career as a probation or parole officer, corrections officer, halfway house administrator, jail corrections officer, juvenile corrections professional, or for a local corrections position. **Not all courses in this program transfer to all colleges.** Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Criminal Justice and Law Center, Old Central Building, Room 232, telephone number (517) 483-1570.

REQUIREMENTS

TOTAL: 49 CREDITS

CODE	TITLE	CREDIT HOURS
CISB 100	Intro Computer Info Systems	3
CJUS 101	Intro to Criminal Justice	3
CJUS 106	Intro to Juvenile Justice	3
CJUS 133	Juvenile Residential Services	3
CJUS 134	Probation and Parole	3
CJUS 245	Report Writing in CJ	2
LEGL 160	Critical Thinking in Law	3
PSYC 200	Introduction to Psychology	4
SOCL 120	Introduction to Sociology	4
SPCH 110	Oral Communic in the Workplace	3
WRIT 124	Technical Writing	3

Vocational Certificate Requirements (See Note 1)

CJUS 131	Introduction to Corrections	3
CJUS 135	Legal Issues in Corrections	3
CJUS 250	Correctional Institutions	3
CJUS 251	Correctional Clients	3
CJUS 255	Human Relations/Criminal Just	3

LIMITED CHOICE REQUIREMENTS

TOTAL: 13 CREDITS

Complete the indicated number of credits from *each* CHOICE listed below.

CHOICE 1: General Education Core Areas 3 Credits
(See the *GENERAL EDUCATION* section above)

Writing Core Area (See Note 2)	0
Speech Communication Core Area (See Note 2)	0
Science/Technology Core Area	3
Global Perspectives and Diversity Core Area (See Note 2)	0
Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)	

CHOICE 2: Related Professional Courses (See Note 3) 10 Credits

CJUS 102	Crime Causes and Conditions	3
CJUS 126	Juvenile Offenders/Their Fam	3
CJUS 204	Criminal Investigation	4
CJUS 205	Policing into the 21st Century	3
SOCL 255	Contemporary Social Problems	3

County and Local Detention Vocational Certificate (See Note 4)

CJUS 130	Local Detention	3
CJUS 242	Unarmed Defense	3
CJUS 246	Jail Safety and I.D. Issues	4
CJUS 256	Interpersonal Comm in Jails	1
WRIT 117	Writing Preparation (See Note 5)	4

Juvenile Care Worker Certificate (See Note 7)

CJUS 126	Juvenile Offenders/Their Fam	3
CJUS 286	Juvenile Internship I	3
CJUS 287	Juvenile Internship II	3
HUSE 100	Introduction to Human Services	3

MINIMUM TOTAL

62

NOTES:

1. Students completing these five courses with a minimum 2.0 grade in *each* class will receive the Michigan Corrections Officer Vocational Certificate.
2. Students completing *REQUIREMENTS* have fulfilled the requirements for this Core area.
3. Students may select any combination of Choice 2 courses to fulfill this requirement, including courses listed within the County and Local Detention Certificate and the Juvenile Care Worker Certificate.
4. Students completing these five courses and CJUS 135, CJUS 245, CJUS 251 and CJUS 255 with a minimum 2.0 grade in *each* class will receive the County and Local Detention Vocational Certificate.
5. This course will be waived if student scores five or above on the Writing Placement Test. This test is administered free of charge in the Assessment Center, Room 2100, Gannon Vocational-Technical Center.
6. All Vocational Certificate courses are certified by the Michigan Corrections Officer Training Council.
7. Students completing these four courses and CISB 100, CJUS 106, CJUS 133, PSYC 200, SOCL 120, and WRIT 124 with a minimum 2.0 grade in *each* class will receive the Juvenile Care Worker Certificate, which is endorsed by the Michigan Juvenile Detention Association.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
CJUS 101	CJUS 106	CISB 100	CJUS 255
CJUS 131	CJUS 245	CJUS 133	PSYC 200
LEGL 160	CJUS 250	CJUS 134	Lim.Ch.1
SOCL 120	CJUS 251	CJUS 135	Lim.Ch.2
WRIT 124	SPCH 110	Lim.Ch.2	Lim.Ch.2
V			
Lim.Ch.2			

STUDENTS ARE RESPONSIBLE FOR COMPLETING ALL REQUIREMENTS AS STATED. THE ONLY OFFICIAL DOCUMENTATION OF PROGRAM COMPLETION STATUS IS AN AUDIT CONDUCTED BY THE REGISTRAR'S OFFICE THAT IS INITIATED WHEN STUDENTS APPLY FOR A DEGREE OR CERTIFICATE. STUDENTS ARE EXPECTED TO APPLY ONE SEMESTER PRIOR TO THE SEMESTER THEY INTEND TO GRADUATE.

**CRIMINAL JUSTICE, LAW ENFORCE
ASSOCIATE IN BUSINESS DEGREE**

Curriculum Code: 0257 (Effective Fall 2001--Summer 2006)

This degree program prepares an individual for a career as a law enforcement officer. It also prepares the individual for possible entry to the Police Academy Program. **Not all courses in this program transfer to all colleges.** Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Criminal Justice and Law Center, Old Central Building, Room 232, telephone number (517) 483-1570.

REQUIREMENTS

TOTAL: 36 CREDITS

CODE	TITLE	CREDIT HOURS
CISB 100	Intro Computer Info Systems	3
CJUS 101	Intro to Criminal Justice	3
CJUS 102	Crime Causes and Conditions	3
CJUS 103	Criminal Law	3
CJUS 106	Intro to Juvenile Justice	3
CJUS 201	Criminal Justice Org/Admin	3
CJUS 204	Criminal Investigation	4
CJUS 205	Policing into the 21st Century	3
CJUS 245	Report Writing in CJ	2
CJUS 255	Human Relations/Criminal Just	3
MGMT 234	Diversity in the Workplace	3
WRIT 124	Technical Writing (See Note 1)	3

LIMITED CHOICE REQUIREMENTS

TOTAL: 26-31 CREDITS

Complete the indicated number of credit from *each CHOICE* listed below.

CHOICE 1: General Education Core Areas 6 Credits

(See the *GENERAL EDUCATION* section above)

Writing Core Area (See Note 2)	0
Speech Communication Core Area	3
Science/Technology Core Area	3
Global Perspectives and Diversity Core Area (See Note 2)	0
Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)	

CHOICE 2: Law Enforcement (Choose 1 Subchoice) 20-25 Credits

Subchoice 2A: Mid-Michigan Police Academy Requirements

CJUS 260	Criminal Invest & Procedures	3
CJUS 261	Michigan Crim Law & Procedure	3
CJUS 262	Patrol Procedures and Tactics	3
CJUS 263	Standard First Aid	2
CJUS 264	Rprt Writing in Law Enforce	1
CJUS 265	Highway Traffic Operations	3
CJUS 266	Basic Police Science	3
CJUS 267	Law Enforcement Phys Traing	2
CJUS 268	Precision Driving	3
PFET 114	Advanced Circuit Training	2

Subchoice 2B: Other Law Enforcement

CJUS 130	Local Detention	3
CJUS 203	Criminal Procedure	3
LEGL 160	Critical Thinking in Law	3
PSYC 200	Introduction to Psychology	4
SOCL 120	Introduction to Sociology	4
SOCL 255	Contemporary Social Problems	3

MINIMUM TOTAL

62

NOTE:

- WRIT 121--Composition I is recommended for students planning to transfer and may be substituted for WRIT 124.
- Students completing *REQUIREMENTS* have fulfilled the requirements for this Core area.
- It is planned that courses in this degree, including Subchoice 2B, will be on-line by Fall 2002. (It is not planned that Police Academy courses will become a virtual offering.)

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

Subchoice 2A: Mid-Michigan Police Academy

I	II	III	IV
CJUS 101	CJUS 201	CISB 100	Police Academy
CJUS 102	CJUS 204	CJUS 103	
CJUS 106	CJUS 205	CJUS 255	
WRIT 124	CJUS 245	MGMT 234	
	Lim.Ch.1	SPCH 110	

Subchoice 2B: Other Law Enforcement

I	II	III	IV
CJUS 101	CJUS 106	CISB 100	CJUS 130
CJUS 102	CJUS 201	CJUS 103	PSYC 200
LEGL 160	CJUS 205	CJUS 255	SOCL 120
WRIT 124	CJUS 245	MGMT 234	
	Lim.Ch.1	SPCH 110	

V

CJUS 203
CJUS 204
SOCL 255

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**JUVENILE CARE WORKER
CERTIFICATE OF ACHIEVEMENT**

Curriculum Code: 0916 (Effective Fall 2001–Summer 2006)

This certificate option is designed to provide entry level skills for the person who wishes to enter the job market as a juvenile care worker at a public or private juvenile residential facility. Students may apply these credits toward completion of the Criminal Justice, Corrections Associate in Business degree.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

INFORMATION

Contact the Criminal Justice and Law Center, Old Central Building, Room 232, telephone number (517) 483-1570.

REQUIREMENTS		TOTAL: 32 CREDITS
CODE	TITLE	CREDIT HOURS
CISB 100	Intro Computer Info Systems	3
CJUS 106	Intro to Juvenile Justice	3
CJUS 126	Juvenile Offenders/Their Fam	3
CJUS 133	Juvenile Residential Services	3
CJUS 286	Juvenile Internship I	3
CJUS 287	Juvenile Internship II	3
HUSE 100	Introduction to Human Services	3
PSYC 200	Introduction to Psychology	4
SOCL 120	Introduction to Sociology	4
WRIT 124	Technical Writing	3
MINIMUM TOTAL		32

NOTE:

1. Students must complete each of these courses with a minimum 2.0 grade to receive this certificate which is endorsed by the Michigan Juvenile Detention Association.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II
CISB 100	CJUS 133
CJUS 106	CJUS 287
CJUS 126	HUSE 100
CJUS 286	SOCL 120
PSYC 200	WRIT 124

**MID-MICHIGAN POLICE ACADEMY
CERTIFICATE OF COMPLETION**

Curriculum Code: 0737 (Effective Fall 2001–Summer 2006)

The Mid-Michigan Police Academy at Lansing Community College is a 15-week basic police training program designed to meet or exceed state mandated certification requirements for preparing individuals for a career in law enforcement. Within the 15 weeks, more than 650 hours are utilized to provide training in 70 different topic areas. The curriculum includes topics such as criminal law and procedure, investigations, patrol procedures, human relations, conflict mediation, firearms, precision driving, use of lethal and non-lethal force, defensive tactics, report writing, traffic enforcement, victimization, and crime prevention. The emphasis in this academy is placed upon practical and hands-on training techniques. All courses for this program must be completed in a single semester.

This is a selective admission program. In order to be considered as a candidate for this program, students must meet basic admission requirements beyond those required for admission to the college. All of the courses for this program are open only to students officially admitted to the Police Academy Program.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

INFORMATION

The admission and/or program requirements for this program may change each academic year. For the most recent and complete information about admission requirements, contact the Police Academy Coordinator, William Martin, in the Police Academy Office, Old Central Building, Room 232, telephone number (517) 483-5248, or contact the LCC Admissions Office, Gannon Vocational-Technical Center, Room 2200, telephone number (517) 483-1254.

REQUIREMENTS FOR ADMISSION TO THE MID-MICHIGAN POLICE ACADEMY PROGRAM

For current information about admission requirements, contact the Police Academy Coordinator, William Martin, in the Police Academy Office, Old Central Building, Room 232, telephone number (517) 483-5248, or contact the LCC Admissions Office, Gannon Vocational-Technical Center, Room 2200, telephone number (517) 483-1254.

REQUIREMENTS		TOTAL: 25 CREDITS
CODE	TITLE	CREDIT HOURS
CJUS 280	Criminal Invest & Procedures	3
CJUS 261	Michigan Crim Law & Procedure	3
CJUS 262	Patrol Procedures and Tactics	3
CJUS 263	Standard First Aid	2
CJUS 264	Rprt Writing in Law Enforce	1
CJUS 265	Highway Traffic Operations	3
CJUS 266	Basic Police Science	3
CJUS 267	Law Enforcement Phys Traing	2
CJUS 268	Precision Driving	3
PFFT 114	Advanced Circuit Training	2
MINIMUM TOTAL		25

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**TEACHER PARAPROFESSIONAL
CERTIFICATE OF COMPLETION**

Curriculum Code: 0829 (Effective Fall 2001–Summer 2006)

The program is designed to prepare students for employment as a Teacher para-professional. Required courses provide an introduction to educational concepts as well as a practical experience in an elementary school classroom. Courses in this program are applicable to the Associate in Arts Degree with a concentration in Elementary Education. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

INFORMATION

Contact the Social Science Department, Room 353, Arts and Sciences Building, telephone number, 483-1126.

REQUIREMENTS**Total: 6 Credits**

CODE	TITLE	CREDIT HOURS
EDUC 201	Teacher Education Practicum	2
EDUC 220	Introduction to Education	3
CHDV 186	Child Self-Esteem/Pos Discipl	1

LIMITED CHOICE REQUIREMENTS**Total: 9–12 Credits**

Complete the indicated number of credits.

ARTS 240	Art for Elementary Teachers	3
ENGL 208	Children's Literature	4
GEOG 200	World Regional Geography	4
ISCI 121	Integrated Sci for Education I	4
MATH 201	Math for Elemen Teachers	3
MUSC 200	Music Fund for Elemen Teachers	3
PSYC 204	Educational Psychology	3

MINIMUM TOTAL**15****SUGGESTED COURSE SEQUENCE**

The certificate program can be completed in two semesters. Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an advisor or counselor for help with adjustments.

I	II
EDUC 201	EDUC 220
CHDV 186	Lim. Ch.
Lim. Ch.	Lim. Ch.

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**ELECTRICAL TECH. CONSTRUCTION
CERTIFICATE OF ACHIEVEMENT**

Curriculum Code: 0759 (Effective Fall 2001--Summer 2006)

This certificate is designed to provide students with a background in applied electrical theory and the basic mechanical skills necessary to the practicing construction electrician.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

INFORMATION

Contact the Technology Careers Department, Gannon Vocational-Technical Center, Room 1380, telephone number (517) 483-1336.

REQUIREMENTS**TOTAL: 41 CREDITS**

CODE	TITLE	CREDIT HOURS
BLDT 103	Structural Blueprint Reading	4
ELTE 100	Electrical Safety Practices	1
ELTE 105	Intro Industrial Automation	4
ELTE 110	Practical Electricity	3
ELTE 112	Basic Wiring Installation	2
ELTE 121	Analyzing Electric Circuits	5
ELTE 123	Motors and Transformers	5
ELTE 131	Intro to Machine Control	4
ELTE 141	National Electrical Code I	4
ELTE 145	Electrical Prints for Building	4
ELTE 150	Electric Motor Maintenance	2
ELTE 240	Electrical Estimating	3

MINIMUM TOTAL**41****SUGGESTED COURSE SEQUENCE**

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III
BLDT 103	ELTE 112	ELTE 123
ELTE 100	ELTE 121	ELTE 141
ELTE 105	ELTE 131	ELTE 150
ELTE 110	ELTE 145	ELTE 240

**ELECTRICAL TECH. CONTROL/MAINT
CERTIFICATE OF ACHIEVEMENT**

Curriculum Code: 0760 (Effective Fall 2001--Summer 2006)

This certificate is designed to provide students with a background in applied electrical theory and the basic mechanical skills necessary to the practicing electrician in the machine control field.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

INFORMATION

Contact the Technology Careers Department, Gannon Vocational-Technical Center, Room 1380, telephone number (517) 483-1336.

REQUIREMENTS**TOTAL: 41 CREDITS**

CODE	TITLE	CREDIT HOURS
ELTE 100	Electrical Safety Practices	1
ELTE 105	Intro Industrial Automation	4
ELTE 110	Practical Electricity	3
ELTE 112	Basic Wiring Installation	2
ELTE 121	Analyzing Electric Circuits	5
ELTE 122	Industrial Control Electronics	5
ELTE 123	Motors and Transformers	5
ELTE 131	Intro to Machine Control	4
ELTE 150	Electric Motor Maintenance	2
ELTE 260	Intro/Programmable Controllers	4
ELTE 261	Allen-Bradley PLC-5 Advanced	6

MINIMUM TOTAL**41****SUGGESTED COURSE SEQUENCE**

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
ELTE 100	ELTE 112	ELTE 123	ELTE 122
ELTE 105	ELTE 121	ELTE 260	ELTE 261
ELTE 110	ELTE 131		
	ELTE 150		

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**ELECTRICAL WIRING
CERTIFICATE OF COMPLETION****Curriculum Code: 0964 (Effective Fall 2001–Summer 2006)**

This certificate is designed to provide students with entry level skills in basic electrical theory, fundamental wiring installation techniques, and an understanding of the National Electrical Code. This curriculum would be an excellent choice for students wishing to apply for a construction electrical apprenticeship. All of the course work may be applied toward the Electrical Technology, Associate in Applied Science Degree.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

INFORMATION

Contact the Technology Careers Department, Gannon Vocational-Technical Center, Room 1380, telephone number (517) 483-1336.

REQUIREMENTS**TOTAL: 18 CREDITS**

CODE	TITLE	CREDIT HOURS
ELTE 100	Electrical Safety Practices	1
ELTE 110	Practical Electricity	3
ELTE 112	Basic Wiring Installation	2
ELTE 141	National Electrical Code I	4
ELTE 142	National Electrical Code II	4
ELTE 145	Electrical Prints for Building	4

MINIMUM TOTAL**18****SUGGESTED COURSE SEQUENCE**

Students should see course descriptions to find out when departments plan to offer courses. Students wishing to complete this certificate in less than four semesters, or students who for any reason are unable to follow the course sequence suggested below, should contact a program advisor for help with adjustments.

I	II	III	IV
ELTE 100	ELTE 112	ELTE 142	ELTE 145
ELTE 110	ELTE 141		

STUDENTS ARE RESPONSIBLE FOR COMPLETING ALL REQUIREMENTS AS STATED. THE ONLY OFFICIAL DOCUMENTATION OF PROGRAM COMPLETION STATUS IS AN AUDIT CONDUCTED BY THE REGISTRAR'S OFFICE THAT IS INITIATED WHEN STUDENTS APPLY FOR A DEGREE OR CERTIFICATE. STUDENTS ARE EXPECTED TO APPLY ONE SEMESTER PRIOR TO THE SEMESTER THEY INTEND TO GRADUATE.

**ELECTRICAL TECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE DEGREE**
Curriculum Code: 0134 (Effective Fall 2001–Summer 2006)

Students in this program may select either the construction specialty or the machine control and maintenance specialty. Construction electricians install electrical wiring and systems in homes, offices, stores or industrial plants. Machine control designers are responsible for designing control circuits which operate machinery in plants. Maintenance electricians work in industry maintaining and troubleshooting power and control circuits on machinery. Both specialties require mechanical aptitude, logical thinking and problem-solving skills. Employment opportunities vary with each specialty.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Technology Careers Department, Gannon Vocational-Technical Center, Room 1380, telephone number (517) 483-1336.

REQUIREMENTS
TOTAL: 34 CREDITS

CODE	TITLE	CREDIT HOURS
ELTE 100	Electrical Safety Practices	1
ELTE 105	Intro Industrial Automation	4
ELTE 110	Practical Electricity	3
ELTE 112	Basic Wiring Installation	2
ELTE 121	Analyzing Electric Circuits	5
ELTE 123	Motors and Transformers	5
ELTE 131	Intro to Machine Control	4
ELTE 145	Electrical Prints for Building	4
ELTE 150	Electric Motor Maintenance	2
ELTE 260	Intro/Programmable Controllers	4

LIMITED CHOICE REQUIREMENTS
TOTAL: 31–34 CREDITS

Complete the indicated number of credits from *each CHOICE* listed below.

CHOICE 1: General Education Core Areas 12 Credits

(See the *GENERAL EDUCATION* section above)

Writing Core Area	3
Speech Communication Core Area	3
Science/Technology Core Area	3
Global Perspectives and Diversity Core Area	3
Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)	

CHOICE 2: Electrical Specialization (Choose 1 Subchoice) 19–22 Credits
Subchoice 2A: Construction Specialization

BLDT 103	Structural Blueprint Reading	4
BLDT 277	Construction Cost Estimating	4
ELTE 141	National Electrical Code I	4
ELTE 142	National Electrical Code II	4
ELTE 240	Electrical Estimating	3
HVAC 100	Fundamentals of HVAC	3

Subchoice 2B: Machine Control and Maintenance Specialization

ELTE 122	Industrial Control Electronics	5
ELTE 232	Industrial Control Design	4
ELTE 261	Allen-Bradley PLC-5 Advanced	6
MFGM 101	Industrial Hydraulics	4

MINIMUM TOTAL 65
SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

Construction Specialty

I	II	III	IV
ELTE 100	ELTE 112	BLDT 103	BLDT 277
ELTE 105	ELTE 121	ELTE 123	ELTE 145
ELTE 110	ELTE 131	ELTE 142	HVAC 100
Lim.Ch.	ELTE 141	ELTE 240	Lim.Ch.
Lim.Ch.	ELTE 150	ELTE 260	Lim.Ch.

Control and Maintenance Specialty

I	II	III	IV
ELTE 100	ELTE 112	ELTE 123	ELTE 232
ELTE 105	ELTE 122	ELTE 131	ELTE 261
ELTE 110	ELTE 145	ELTE 260	Lim.Ch.
ELTE 121	ELTE 150	MFGM 101	
Lim.Ch.	Lim.Ch.	Lim.Ch.	

**MACHINE CONTROL
CERTIFICATE OF COMPLETION**
Curriculum Code: 0966 (Effective Fall 2001–Summer 2006)

This certificate is designed to provide students with entry level skills in the understanding of basic electrical theory, basic electrical operating characteristics of industrial machinery, and basic operation of programmable logic controllers. This curriculum would be an excellent choice for students wishing to enter an industrial electrical apprenticeship or for students in other industrial trades who wish to have a basic understanding of electrical control of industrial machines. All of the course work may be applied toward the Electrical Technology, Associate in Applied Science Degree.

REQUIREMENTS
TOTAL: 22 CREDITS

CODE	TITLE	CREDIT HOURS
ELTE 100	Electrical Safety Practices	1
ELTE 110	Practical Electricity	3
ELTE 131	Intro to Machine Control	4
ELTE 232	Industrial Control Design	4
ELTE 260	Intro/Programmable Controllers	4
ELTE 261	Allen-Bradley PLC-5 Advanced	6

MINIMUM TOTAL 22
SUGGESTED COURSE SEQUENCE

I	II	III	IV
ELTE 100	ELTE 131	ELTE 260	ELTE 232
ELTE 110			ELTE 261

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**ELECTRONICS TECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE DEGREE**

Curriculum Code: 0894 (Effective Fall 2001–Summer 2006)

Electronics technicians install, operate, maintain, and service electronics equipment. They also diagnose and repair problems caused by mechanical or electrical malfunctions in individual electronic units and in complex systems such as local area networks (LANs) and industrial controllers. They deal with the analysis and component level troubleshooting of analog and digital circuits. Electronics technicians are employed with automotive manufacturers, industrial automation companies, business machine service companies, telephone companies, hospitals, aircraft service companies, radio and TV service companies, instrumentation sales, robotics repair companies, and maintenance companies. **Not all courses in this program transfer to all colleges.** Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Technology Careers Department, Gannon Vocational-Technical Center, Room 1380, telephone number (517) 483-1336.

REQUIREMENTS

TOTAL: 57 CREDITS

CODE	TITLE	CREDIT HOURS
CISB 200	Info Sys Tech/Problem Solving	3
ELCT 100	Schematic Drawing	1
ELCT 101	Analog Problems	5
ELCT 109	DC Circuits	3
ELCT 110	AC Circuits	3
ELCT 112	Transistors	6
ELCT 120	Programming Preparation	2
ELCT 131	Digital Basics	3
ELCT 161	Soldering/Desoldering	1
ELCT 211	Linear Circuits I	3
ELCT 212	Linear Circuits II	3
ELCT 231	Advanced Digital Electronics	4
ELCT 232	Digital Commun and Networking	4
ELCT 251	Electronic Troubleshooting	2
ELCT 271	Communications I	4
ELCT 272	Communications II	4
SPCH 110	Oral Communic in the Workplace	3
WRIT 124	Technical Writing	3

LIMITED CHOICE REQUIREMENTS

TOTAL: 8 CREDITS

Complete the indicated number of credits from *each CHOICE* listed below.

CHOICE 1: General Education Core Areas 3 Credits

(See the *GENERAL EDUCATION* section above)

Writing Core Area (See Note 1)	0
Speech Communication Core Area (See Note 1)	0
Science/Technology Core Area (See Note 1)	0
Global Perspectives and Diversity Core Area	3
Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)	

CHOICE 2: Electronics Specialty (Choose 1 Subchoice) 5 Credits

Subchoice 2A: Biomedical

ELCT 261	Consumer Product Systems	3
ELCT 290	Biomedical Internship	2

Subchoice 2B: Communications

ELCT 261	Consumer Product Systems	3
ELCT 291	Communications Internship	2

Subchoice 2C: Digital

ELCT 242	Comp Infrng and Peripherals	3
ELCT 292	Digital Electronics Internship	2

MINIMUM TOTAL

65

NOTE:

1. Students completing *REQUIREMENTS* have fulfilled the requirements for this Core area.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
ELCT 100	CISB 200	ELCT 211	ELCT 212
ELCT 101	ELCT 112	ELCT 231	ELCT 232
ELCT 109	ELCT 120	ELCT 251	ELCT 272
ELCT 110	ELCT 131	ELCT 271	Lim.Ch.2
ELCT 161	WRIT 124	Lim.Ch.1	Lim.Ch.2
SPCH 110			

**ELECTRONICS TROUBLESHOOTER
CERTIFICATE OF ACHIEVEMENT**

Curriculum Code: 0895 (Effective Fall 2001–Summer 2006)

Electronics troubleshooters are trained in basic electronics circuitry and have basic troubleshooting skills. They typically work in an entry-level position under the guidance of a more experienced technician.

REQUIREMENTS

TOTAL: 31 CREDITS

CODE	TITLE	CREDIT HOURS
ELCT 100	Schematic Drawing	1
ELCT 101	Analog Problems	5
ELCT 109	DC Circuits	3
ELCT 110	AC Circuits	3
ELCT 112	Transistors	6
ELCT 120	Programming Preparation	2
ELCT 131	Digital Basics	3
ELCT 161	Soldering/Desoldering	1
ELCT 181	Computer Test Equipment II	2
ELCT 251	Electronic Troubleshooting	2
ELCT 261	Consumer Product Systems	3

MINIMUM TOTAL

31

SUGGESTED COURSE SEQUENCE

I	II
ELCT 100	ELCT 112
ELCT 101	ELCT 120
ELCT 109	ELCT 181
ELCT 110	ELCT 251
ELCT 131	ELCT 261
ELCT 161	

**FIRE SCIENCE ACADEMY
CERTIFICATE OF COMPLETION**

Curriculum Code: 0709 (Effective Fall 2001–Summer 2002)

The Regional Fire Training Center provides the Fire Academy Certificate Program to prepare individuals in basic fire training and fitness. Successful completion leads to certification by the Michigan Fire Fighting Training Council for Fire Fighter I and II, Hazardous Materials Awareness, and Hazardous Materials Operations.

The Fire Science Academy is a selective admission program. In order to be considered as a candidate for this program, students must meet basic admission requirements beyond those required for admission to the college. Many of the courses for this program are open only to students officially admitted to the Fire Science Academy Program.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

INFORMATION

The admission and/or graduation requirements for this program may change each academic year. **The program requirements below apply only to those students who have been admitted to the program for the 2001/2002 academic year.** For the most recent and complete information, interested students should contact the Admissions Office, Gannon Vocational-Technical Center, Room 2200, telephone number (517) 483-1254.

REQUIREMENTS FOR ADMISSION TO THE FIRE SCIENCE ACADEMY PROGRAM

For current information about admission requirements, students must contact the Admissions Office, Gannon Vocational-Technical Center, Room 2200, telephone number (517) 483-1254.

REQUIREMENTS

TOTAL: 14 CREDITS

CODE	TITLE	CREDIT HOURS
FIRE 101	MI F.F.T.C. Basic Fire Lev I	9
FIRE 102	MI F.F.T.C. Basic Fire Lev II	4
PFHW 109	Emergency Services Fitness I	1

MINIMUM TOTAL 14

SUGGESTED COURSE SEQUENCE

- FIRE 101
- FIRE 102
- PFHW 109

**FIRE SCIENCE TECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE DEGREE**

Curriculum Code: 0123 (Effective Fall 2001–Summer 2006)

This degree program prepares an individual for a career in fire fighting. Included in this curriculum is successful completion of a Michigan Fire Fighting Training Council Fire Fighter I and Fire Fighter II course. In addition, students are required to complete course work in fire safety information and inspection, fire suppression, hazardous material spills and investigative techniques, fire prevention and law, building construction, command and administration, and hydraulics and pump operation. **Not all courses in this program transfer to all colleges.** Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Criminal Justice and Law Center, Old Central Building, Room 232, telephone number (517) 483-1570.

REQUIREMENTS

TOTAL: 58 CREDITS

CODE	TITLE	CREDIT HOURS
FIRE 100	Introduction to Fire Fighting	3
FIRE 101	MI F.F.T.C. Basic Fire Lev I	9
FIRE 102	MI F.F.T.C. Basic Fire Lev II	4
FIRE 110	Fire Prevention and Law	3
FIRE 115	Building Construction/Fire Ser	4
FIRE 120	Chemistry/Hazardous Materials	3
FIRE 125	Fire Protection Sys/Equipment	4
FIRE 130	Fire Hydraulics/Pump Operation	4
FIRE 150	Fire Command and Operations	4
FIRE 210	Fire Investigation	4
FIRE 220	Hazardous Materials/Fire Ser	4
FIRE 250	Fire Administration	4
PFHW 110	Emergency Services Fitness II	1
PFHW 111	Emergency Services Fitness III	1
SPCH 120	Dynamics of Communication	3
WRIT 124	Technical Writing	3

LIMITED CHOICE REQUIREMENTS

TOTAL: 6 CREDITS

Complete the indicated number of credits from each CHOICE listed below.

CHOICE 1: General Education Core

6 Credits

(See the GENERAL EDUCATION section above)

Writing Core Area (See Note 2)	0
Speech Communication Core Area (See Note 2)	0
Science/Technology Core Area	3
Global Perspectives and Diversity Core Area	3
Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)	

MINIMUM TOTAL 64

NOTES:

1. This curriculum includes FIRE 101 and FIRE 102 which are the Fire Academy courses. The Fire Academy Certificate Program is a selective admission program with admission requirements beyond those required for admission to the college. Students with Michigan Fire Fighter I or I & II certification may be eligible for FIRE 101 and/or FIRE 102 to be waived. Students should consult with a Fire Science program advisor regarding this segment of the program.
2. Students completing REQUIREMENTS have fulfilled the requirements for these Core areas.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
FIRE 100	FIRE 110	FIRE 115	FIRE 130
FIRE 101	SPCH 120	FIRE 120	FIRE 210
FIRE 102	WRIT 124	FIRE 125	FIRE 220
PFHW 110	Lim.Ch.	FIRE 150	FIRE 250
	Lim.Ch.		PFHW 111

STUDENTS ARE RESPONSIBLE FOR COMPLETING ALL REQUIREMENTS AS STATED. THE ONLY OFFICIAL DOCUMENTATION OF PROGRAM COMPLETION STATUS IS AN AUDIT CONDUCTED BY THE REGISTRAR'S OFFICE THAT IS INITIATED WHEN STUDENTS APPLY FOR A DEGREE OR CERTIFICATE. STUDENTS ARE EXPECTED TO APPLY ONE SEMESTER PRIOR TO THE SEMESTER THEY INTEND TO GRADUATE.

**GIS/GEOSPACIAL TECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE DEGREE**

Curriculum Code: 0224 (Effective Fall 2001–Summer 2006)

Geographic Information Systems and Geospatial Technology combines computer technology, mapping technologies, aerial photography, and satellite imagery with the most current environmental resource management and environmental analysis software. Geographic Information Systems (GIS) technicians work with computer drafting, design, database management, graphic design, and computer analysis. Environmental technology requirements include a working knowledge of natural systems and related regulations and their assessment, planning, restoration, and management. GIS technicians are employed with engineering and design firms, state and federal agencies, environmental firms, parks and recreation departments, and with municipalities and local government units. **Not all courses in this program transfer to all colleges.** Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Technology Careers Department, Gannon Vocational-Technical Center, Room 1380, telephone number (517) 483-1336.

REQUIREMENTS

TOTAL: 36 CREDITS

CODE	TITLE	CREDIT HOURS
GRET 205	Principles Geographic Info. Sys	3
GRET 210	Global Positioning Systems	3
GRET 220	Hydrological Systems	3
GRET 221	Landforms/Soil Systems in GIS	3
GRET 223	Environmental Resource Mgmt	3
GRET 240	Cartography in GIS	3
GRET 241	Remote Sens/AirPhoto Interpret	3
GRET 243	ORACLE/Geographic Info Sys	3
GRET 265	Analysis Applications in GIS	3
LAND 150	Principles of Landscape Arch	3
LAND 180	Landscape Ecology	3
WRIT 124	Technical Writing	3

LIMITED CHOICE REQUIREMENTS

TOTAL: 33 CREDITS

Complete the indicated number of credits from *each CHOICE* listed below.

CHOICE 1: General Education Core Areas 9 Credits

(See the *GENERAL EDUCATION* section above)

Writing Core Area (See Note 1)	0
Speech Communication Core Area	3
Science/Technology Core Area	3
Global Perspectives and Diversity Core Area	3
Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)	

CHOICE 2: GIS Specializations (Choose One Subchoice) 12 Credits**Subchoice 2A:**

GRET 203	Beginning MicroStation	3
GRET 204	MicroStation Graphic Environ	3
GRET 213	Advanced MicroStation	3
GRET 266	Project Design in GIS	3

Subchoice 2B:

GRET 253	Basics of ARC/View	3
GRET 255	Beginning ARC/Info	3
GRET 258	Arc/View Extensions in G.I.S.	3
LAND 282	Computer Draft/Dsgn Land Arch	3

CHOICE 3: Additional Related Courses	12 Credits	
GRET 211	Geomedia-Internet GIS	3
GRET 248	GIS/GPS Field Systems	3
GRET 256	Advanced ARC/info	3
LAND 181	Landscape Restoration/Manage	3
LAND 242	Ecological Land Planning	3
LAND 283	Beginning LANDCADD	3

MINIMUM TOTAL 69**NOTE:**

- Students completing *REQUIREMENTS* have fulfilled the requirements for this Core area.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
GRET 205	GRET 210	GRET 221	GRET 223
GRET 220	GRET 241	GRET 243	GRET 265
GRET 240	WRIT 124	LAND 150	Lim.Ch.
LAND 180	Lim.Ch.	Lim.Ch.	Lim.Ch.
Lim.Ch.	Lim.Ch.	Lim.Ch.	Lim.Ch.
Lim.Ch.	Lim.Ch.	Lim.Ch.	

**GEOGRAPHIC INFORMATION SYSTEMS
CERTIFICATE OF ACHIEVEMENT**

Curriculum Code: 0834 (Effective Fall 2001–Summer 2006)

This certificate program will emphasize development of components for GIS and project design based on application areas. The certificate allows beginners to become familiar with basic principles and those with some application background to become computer proficient in GIS. Certificate courses can all be applied to the associate degree.

REQUIREMENTS

TOTAL: 33 CREDITS

CODE	TITLE	CREDIT HOURS
GRET 205	Principles Geographic Info Sys	3
GRET 210	Global Positioning Systems	3
GRET 240	Cartography in GIS	3
GRET 241	Remote Sens/AirPhoto Interpret	3
GRET 243	ORACLE/Geographic Info Sys	3
GRET 253	Basics of ARC/View	3
GRET 255	Beginning of ARC/Info	3
GRET 256	Advanced ARC/info	3
GRET 258	ARC/View Extensions G.I.S.	3
GRET 266	Project Design in GIS	3
LAND 282	Computer Draft/Dsgn Land Arch	3

MINIMUM TOTAL 33**SUGGESTED COURSE SEQUENCE**

I	II	III
GRET 205	GRET 240	GRET 243
GRET 210	GRET 241	GRET 256
GRET 253	GRET 255	GRET 266
LAND 282	GRET 258	

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BASIC EMERGENCY MED SERVICES CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 0269 (Effective Fall 2001--Summer 2006)

This certificate program prepares an individual as a Basic Emergency Medical Technician (EMT). Basic EMTs perform immediate basic emergency care in medical and traumatic emergencies. Basic EMTs staff ambulances and are employed in hospitals. State licensing is required. An EMT Academy option is available to students.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

INFORMATION

Contact the Human, Health and Public Service Careers Department, Gannon Vocational-Technical Center, Room 1750, telephone number (517) 483-1410.

REQUIREMENTS		TOTAL: 32 CREDITS
CODE	TITLE	CREDIT HOURS
AHCC 110	Pharmacology-Allied Health	2
BIOL 145	Introductory Anat & Physiology	4
CISB 200	Info Sys Tech/Problem Solving	3
EMTA 101	Basic EMT I	4
EMTA 102	Basic EMT II	2
EMTA 103	Basic EMT III	4
EMTA 104	Basic EMT IV	2
EMTA 105	Ambulance Driving	1
EMTA 108	Legal Issues in EMS	2
EMTA 112	Basic EMT Clinical	2
EMTA 114	Rescue/Extrication/Danger Situ	3
WRIT 124	Technical Writing	3
MINIMUM TOTAL		32

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II
BIOL 145	AHCC 110
CISB 200	EMTA 103
EMTA 101	EMTA 104
EMTA 102	EMTA 108
EMTA 105	EMTA 112
EMTA 114	WRIT 124

EMT Academy Option

I	II	III
EMTA 101	BIOL 145	AHCC 110
EMTA 102	EMTA 105	CISB 200
EMTA 103	EMTA 114	EMTA 108
EMTA 104	WRIT 124	
EMTA 112		

STUDENTS ARE RESPONSIBLE FOR COMPLETING ALL REQUIREMENTS AS STATED. THE ONLY OFFICIAL DOCUMENTATION OF PROGRAM COMPLETION STATUS IS AN AUDIT CONDUCTED BY THE REGISTRAR'S OFFICE THAT IS INITIATED WHEN STUDENTS APPLY FOR A DEGREE OR CERTIFICATE. STUDENTS ARE EXPECTED TO APPLY ONE SEMESTER PRIOR TO THE SEMESTER THEY INTEND TO GRADUATE.

**DENTAL HYGIENIST
ASSOCIATE IN APPLIED SCIENCE DEGREE**

Curriculum Code: 0279 (Effective Fall 2001–Summer 2003)

Dental hygienists are licensed preventive oral health care professionals. They provide educational, clinical, and therapeutic services to patients in dental offices, schools, hospitals, long-term care facilities, and other public health programs. Clinical skills include performing patient assessments, taking health histories; examining head, neck and oral tissues for disease; checking blood pressures; exposing and processing dental x-ray pictures; applying decay-preventing agents to the teeth; polishing fillings; scaling and root planing teeth; and polishing teeth. Upon graduation from this accredited program one is eligible to take the written and clinical licensing exams. **Not all courses in this program transfer to all colleges.** Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

This is a selective admission program. In order to be considered as a candidate for this program, students must meet basic admission requirements beyond those required for admission to the college. Many of the courses for this program are open only to students officially admitted to the Dental Hygienist Program.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

The admission and/or graduation requirements for this program may change each academic year. **The program requirements below apply only to those students who have been admitted to the program for the 2001/2002 academic year.** For the most recent and complete information, interested students should contact the Admissions Office, Gannon Vocational-Technical Center, Room 2200, telephone number (517) 483-1254. For Dental Hygienist career advising information, contact the Dental Advisor at the Dental Hygienist Program office, Arts and Sciences Building, Room 007F, telephone number (517) 483-1457.

REQUIREMENTS FOR ADMISSION TO THE DENTAL HYGIENIST PROGRAM

For current information about admission requirements, students must contact the Admissions Office, Gannon Vocational-Technical Center, Room 2200, telephone number (517) 483-1254.

REQUIREMENTS

TOTAL: 73 CREDITS

CODE	TITLE	CREDIT HOURS
BIOL 201	Human Anatomy	4
BIOL 202	Human Physiology	4
BIOL 203	Microbiology	3
DAOH 128	Dental Radiography	4
DHYN 110	Preclinical Dental Hygiene	6
DHYN 112	Oral Anatomy	4
DHYN 114	Oral Pathology	2
DHYN 116	Dental Pharmacology	2
DHYN 120	Clinical Dental Hygiene I	6
DHYN 122	Principles of Periodontics	2
DHYN 124	Nutrition and Oral Health	2
DHYN 126	Dental Materials and Methods	3
DHYN 210	Clinical Dental Hygiene II	6
DHYN 212	Advanced Dental Hygiene Proced	4
DHYN 214	Clinical Oral Pathology	1
DHYN 216	Dental Public Health & Educ	2
DHYN 220	Clinical Dental Hygiene III	7
DHYN 222	Community Oral Health	4
SOCL 120	Introduction to Sociology	4
SPCH 120	Dynamics of Communication	3

LIMITED CHOICE REQUIREMENTS

TOTAL: 3 CREDITS

Complete the indicated number of credits from each CHOICE listed below.

CHOICE 1: General Education Core Areas **3 Credits**
(See the *GENERAL EDUCATION* section above)

Writing Core Area	3
Speech Communication Core Area (See Note 1)	0
Science/Technology Core Area (See Note 1)	0
Global Perspectives and Diversity Core Area (See Note 1)	0
Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)	

MINIMUM TOTAL **76**

NOTES:

1. Students completing *REQUIREMENTS* have fulfilled the requirements for this Core area.
2. DHYN 224, Testing Styles and Inventory, 2 credits, is an optional course to prepare for Dental Hygiene licensure exams.
3. Dental Hygienist students desiring eligibility to take the Michigan Registered Dental Assistant licensure exam must also successfully complete DHYN 230, RDA Proc-DH, 2 credits, offered spring semester.
4. Current Basic Cardiac Life Support Certification (BCLS) is required throughout the program. (EMSB 102 or American Red Cross Provider C.)

SUGGESTED COURSE SEQUENCE

Courses listed in semesters I, II, and III below must be completed prior to admission to the Dental Hygienist Program as part of the requirements for admission. Once admitted to the program, students begin semester IV courses during fall semester. DHYN and DADH courses are offered once a year in the following sequence for a two-year period and are scheduled fall and spring semesters only.

I	II	III	
BIOL 201	BIOL 202	BIOL 203	
SOCL 120	SPCH 120	Lim.Ch.	
IV	V	VI	VII
DHYN 110	DADH 128	DHYN 210	DHYN 220
DHYN 112	DHYN 120	DHYN 212	DHYN 222
DHYN 114	DHYN 122	DHYN 214	
DHYN 116	DHYN 124	DHYN 216	
	DHYN 126		

STUDENTS ARE RESPONSIBLE FOR COMPLETING ALL REQUIREMENTS AS STATED. THE ONLY OFFICIAL DOCUMENTATION OF PROGRAM COMPLETION STATUS IS AN AUDIT CONDUCTED BY THE REGISTRAR'S OFFICE THAT IS INITIATED WHEN STUDENTS APPLY FOR A DEGREE OR CERTIFICATE. STUDENTS ARE EXPECTED TO APPLY ONE SEMESTER PRIOR TO THE SEMESTER THEY INTEND TO GRADUATE.

**DIAGNOSTIC MEDICAL SONOGRAPHY
ASSOCIATE IN APPLIED SCIENCE DEGREE**

Curriculum Code: 0790 (Effective Fall 2001--Summer 2003)

The Diagnostic Medical Sonography program prepares the sonographer to provide patient services in a variety of medical settings using medical ultrasound under the supervision of a physician. Sonographers assist the physician in gathering sonographic data necessary to diagnose a variety of conditions and diseases. Sonographers obtain, review, and integrate patient history and supporting clinical data to facilitate optimum diagnostic results. They perform appropriate procedures and record anatomical, pathological, and/or physiological data as well as sonographic data and other pertinent observations made during the procedure for interpretation by a physician. They provide patient education related to medical ultrasound and promote principles of good health.

The D.M.S. program is designed for graduates of an accredited program in Radiologic Technology, Registered Nursing, Respiratory Therapy, Occupational Therapy, or Physical Therapy. Graduates of the D.M.S. program are prepared for examination by the American Registry of Diagnostic Medical Sonographers. The associate degree option is intended for students who have completed the D.M.S. Certificate of Achievement and wish to complete additional course work including general education requirements. Students who already have an associate degree or higher should contact a D.M.S. program advisor for information and advising.

This is a selective admission program. In order to be considered as a candidate for this program, students must meet basic admission requirements beyond those required for admission to the college. Many of the courses for this program are open only to students officially admitted to the Diagnostic Medical Sonography Program.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

The admission and/or graduation requirements for this program may change each academic year. **The program requirements below apply only to those students who have been admitted to the program for the 2001/2002 academic year.** For the most recent and complete information, interested students should contact the Admissions Office, Gannon Vocational-Technical Center, Room 2200, telephone number (517) 483-1254.

REQUIREMENTS FOR ADMISSION TO THE DIAGNOSTIC MEDICAL SONOGRAPHY PROGRAM

For current information about admission requirements, students must contact the Admissions Office, Gannon Vocational-Technical Center, Room 2200, telephone number (517) 483-1254.

REQUIREMENTS

TOTAL: 44 CREDITS

CODE	TITLE	CREDIT HOURS
AHCC 112	Health Law and Ethics	2
IDMS 201	General Sonography I: Abdomen	4
IDMS 202	OB/GYN Sonography I	4
IDMS 234	Sonographic Physics	2
IDMS 245	Sonographic Instrumentation	2
IDMS 265	General Sonography II	4
IDMS 266	OB/GYN Sonography II	3
IDMS 280	Clinical Experience I	7
IDMS 281	Clinical Experience II	7
IDMS 282	Clinical Experience III	9

LIMITED CHOICE REQUIREMENTS

TOTAL: 16 CREDITS

Complete the indicated number of credits from each CHOICE listed below.

CHOICE 1: General Education Core Areas 12 Credits

(See the GENERAL EDUCATION section above)

Writing Core Area	3
Speech Communication Core Area	3
Science/Technology Core Area	3
Global Perspectives and Diversity Core Area	3
Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)	

CHOICE 2: Computer Related (See Note 1) 4-5 Credits

CABS 102	Microcomputers for Non-Majors	2
CABS 110	Microsoft Office	3
CABS 119	Word for Windows	2
CABS 126	Excel	2

MINIMUM TOTAL 60

NOTE:

- Other computer related courses may be substituted with the approval of a D.M.S. program advisor.

SUGGESTED COURSE SEQUENCE

It is recommended, but not required, that students complete courses listed in Semester IV prior to admission to the Diagnostic Medical Sonography program. MATH 112 is also required for admission to the DMS Program and may be waived by successfully passing a proficiency exam. IDMS courses begin only in the fall and are offered once a year in the following sequence. Students are admitted to the program in the summer and will be assigned to begin Semester I in the fall semester.

I (FALL)	II (SPRING)	III (SUMMER)	IV
IDMS 201	IDMS 245	IDMS 282	AHCC 112
IDMS 202	IDMS 265		Lim.Ch.
IDMS 234	IDMS 266		Lim.Ch.
IDMS 280	IDMS 281		Lim.Ch.
			Lim.Ch.
			Lim.Ch.

**DIAGNOSTIC MEDICAL SONOGRAPHY
CERTIFICATE OF ACHIEVEMENT**

Curriculum Code: 0263 (Effective Fall 2001--Summer 2002)

The certificate option of the D.M.S. program prepares students for examination by the American Registry of Diagnostic Medical Sonographers. It is designed for graduates of an accredited program in Radiologic Technology, Registered Nursing, Respiratory Therapy, Occupational Therapy, or Physical Therapy. Students without an associate degree related to the previously stated professional credentials should refer to the Associate in Applied Science curriculum for Diagnostic Medical Sonography.

This is a selective admission program. In order to be considered as a candidate for this program, students must meet basic admission requirements beyond those required for admission to the College. Many of the courses for this program are open only to students officially admitted to the Diagnostic Medical Sonography Program.

REQUIREMENTS

TOTAL: 42 CREDITS

CODE	TITLE	CREDIT HOURS
IDMS 201	General Sonography I: Abdomen	4
IDMS 202	OB/GYN Sonography I	4
IDMS 234	Sonographic Physics	2
IDMS 245	Sonographic Instrumentation	2
IDMS 265	General Sonography II	4
IDMS 266	OB/GYN Sonography II	3
IDMS 280	Clinical Experience I	7
IDMS 281	Clinical Experience II	7
IDMS 282	Clinical Experience III	9

MINIMUM TOTAL 42

SUGGESTED COURSE SEQUENCE

MATH 112 is required for admission and may be waived by successfully passing a proficiency exam. Students are admitted to the Diagnostic Medical Sonography program in the summer and will be assigned to begin IDMS courses in the fall. Courses are offered once a year in the following sequence.

I (FALL)	II (SPRING)	III (SUMMER)
IDMS 201	IDMS 245	IDMS 282
IDMS 202	IDMS 265	
IDMS 234	IDMS 266	
IDMS 280	IDMS 281	

STUDENTS ARE RESPONSIBLE FOR COMPLETING ALL REQUIREMENTS AS STATED. THE ONLY OFFICIAL DOCUMENTATION OF PROGRAM COMPLETION STATUS IS AN AUDIT CONDUCTED BY THE REGISTRAR'S OFFICE THAT IS INITIATED WHEN STUDENTS APPLY FOR A DEGREE OR CERTIFICATE. STUDENTS ARE EXPECTED TO APPLY ONE SEMESTER PRIOR TO THE SEMESTER THEY INTEND TO GRADUATE.

**EMERGENCY MEDICAL SERVICES
ASSOCIATE IN APPLIED SCIENCE DEGREE**

Curriculum Code: 0276 (Effective Fall 2001--Summer 2006)

This degree program prepares the individual extensively for a career in emergency medical services. Included in this curriculum are the Basic EMT and Paramedic Certificate Programs as well as general education requirements. **Not all courses in this program transfer to all colleges.** Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Human, Health and Public Service Careers Department, Gannon Vocational-Technical Center, Room 1750, telephone number (517) 483-1410.

REQUIREMENTS

TOTAL: 65 CREDITS

CODE	TITLE	CREDIT HOURS
BIOL 145	Introductory Anat & Physiology	4
CISB 200	Info Sys Tech/Problem Solving	3
EMTA 101	Basic EMT I	4
EMTA 102	Basic EMT II	2
EMTA 103	Basic EMT III	4
EMTA 104	Basic EMT IV	2
EMTA 112	Basic EMT Clinical	2
PARA 221	Paramedic Medical Trauma I	5
PARA 222	Paramedic Medical Trauma II	5
PARA 231	Paramedic Cardiology I	3
PARA 232	Paramedic Cardiology II	3
PARA 241	Paramedic Pharmacology I	3
PARA 242	Paramedic Pharmacology II	3
PARA 251	Paramedic Skills I	2
PARA 252	Paramedic Skills II	2
PARA 261	Paramedic Clinical I	3
PARA 262	Paramedic Clinical II	4
PARA 263	Paramedic Internship	3
PFHW 111	Emergency Services Fitness III	1
PFHW 112	Emergency Services Fitness IV	1
SPCH 110	Oral Communic in the Workplace	3
WRIT 124	Technical Writing	3

LIMITED CHOICE REQUIREMENTS

TOTAL: 9-11 CREDITS

Complete the indicated number of credits from *each CHOICE* listed below.

CHOICE 1: General Education Core Areas	3 Credits
(See the <i>GENERAL EDUCATION</i> section above)	
Writing Core Area (See Note 1)	0
Speech Communication Core Area (See Note 1)	0
Science/Technology Core Area (See Note 1)	0
Global Perspectives and Diversity Core Area	3
Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)	

CHOICE 2: EMS Requirements (See Note 2)	6-8 Credits	
AHCC 110	Pharmacology-Allied Health	2
EMTA 105	Ambulance Driving	1
EMTA 108	Legal Issues in EMS	2
EMTA 114	Rescue/Extrication/Danger Situ	3
EMTA 222	EMS Instructor Coordinator	6

MINIMUM TOTAL

74

NOTES:

1. Students completing *REQUIREMENTS* have fulfilled the requirements for these Core areas.
2. Students who have not already completed Basic EMT and Paramedic certificate programs must select AHCC 110, EMTA 105, 108, and 114 to satisfy Choice 2. Students who have already completed Basic EMT and Paramedic certificate programs may elect EMTA 222 to satisfy Choice 2.
3. This curriculum includes PARA 221 through PARA 263 which are the Paramedic Certificate Program courses. The Paramedic Certificate Program is a selective admission program with admission requirements beyond those required for admission to the college. PARA 221 through PARA 263 are open only to students officially admitted to the program. Students should consult with an Emergency Medical Services program advisor regarding this segment of the program.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time or have prerequisites to fulfill) or who have already completed a Basic Emergency Medical Services course should contact the Human, Health and Public Service Careers Department (see "Information" above) for academic advising.

I	II	III	IV
BIOL 145	EMTA 103	CISB 200	PARA 222
EMTA 101	EMTA 104	PARA 221	PARA 232
EMTA 102	EMTA 112	PARA 231	PARA 242
WRIT 124	SPCH 110	PARA 241	PARA 252
Lim.Ch.	Lim.Ch.	PARA 251	PARA 262
Lim.Ch.	Lim.Ch.	PARA 261	PARA 263
	Lim.Ch.	PFHW 111	PFHW 112

STUDENTS ARE RESPONSIBLE FOR COMPLETING ALL REQUIREMENTS AS STATED. THE ONLY OFFICIAL DOCUMENTATION OF PROGRAM COMPLETION STATUS IS AN AUDIT CONDUCTED BY THE REGISTRAR'S OFFICE THAT IS INITIATED WHEN STUDENTS APPLY FOR A DEGREE OR CERTIFICATE. STUDENTS ARE EXPECTED TO APPLY ONE SEMESTER PRIOR TO THE SEMESTER THEY INTEND TO GRADUATE.

**MASSAGE THERAPY
CERTIFICATE OF ACHIEVEMENT**

Curriculum Code: 0837 (Effective Fall 2001–Summer 2006)

This program prepares an individual in the field of soft tissue massage. Massage therapists may be employed in private practice or in a variety of health care settings, spas, lodging, and exercise facilities. Successful completion of this program prepares an individual for national certification testing through the National Certification Board for Therapeutic Massage and Body Work.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

INFORMATION

Contact the Human, Health and Public Service Careers Department, Gannon Vocational-Technical Center, Room 1750, telephone number (517) 483-1410.

REQUIREMENTS

TOTAL: 29 CREDITS

CODE	TITLE	CREDIT HOURS
BIOL 145	Introductory Anat & Physiology	4
MASG 270	Massage Therapy-Beginning	2
MASG 271	Massage Therapy-Intermediate	2
MASG 275	Touch for Health	1
MASG 277	Polarity Therapy I	2
MASG 279	Business Applications/Masg	2
MASG 281	Sports Massage Techniques	2
MASG 282	Clinical/Rehab Massage Tech I	4
MASG 283	Clinical/Rehab Massage Tech II	4
MASG 290	Massage Lab Practicum (See Note 1)	1
PFHW 163	Healthy Lifestyles	2
PFHW 181	Stress Management	1

LIMITED CHOICE REQUIREMENTS

TOTAL: 2-3 CREDITS

Complete the indicated number of credits from each CHOICE listed below.

CHOICE 1:

2-3 Credits

AHCC 121	Herbology in Health Careers	3
MASG 278	Polarity Therapy II	2
PFHW 105	Med Alternatives/Health & Wlms	2
PFHW 161	Self-Awareness: Key to Wlness	2
PFIS 139	Therapeutic Touch and Yoga	3

MINIMUM TOTAL

31

NOTES:

1. The Massage Lab Practicum (MASG 290) consists of 32 hours of supervised massage work. Students must enroll in MASG 290 three times, completing a minimum of 32 supervised lab hours in each semester of enrollment for a total of 96 hours.
2. This Certificate of Achievement is not affiliated with any national certification organization; however, the Massage Therapy Program is approved through the National Certification Board for Therapeutic Massage and Bodywork (NCBTMB). Program graduates are eligible to take the national certification exam offered through this organization.
3. All courses must be completed with a 2.5 grade or better to receive the Certificate of Achievement.
4. All massage courses must be completed within five years of enrollment in the first massage course.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
BIOL 145	MASG 271	MASG 277	MASG 279
MASG 270	MASG 275	MASG 283	MASG 281
	MASG 282	MASG 290	MASG 290
	MASG 290	PFHW 181	Lim. Ch. 1
	PFHW 163		

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**MULTI-SKILL PATIENT CARE TECH
CERTIFICATE OF COMPLETION**

Curriculum Code: 0788 (Effective Fall 2001–Summer 2006)

Students may enter this program from several health-care disciplines or with no health-care experience. Graduates are prepared to perform a variety of duties related to basic patient care at a level of trained, unlicensed personnel and are employed in the hospital setting. Clinical components will be provided in cooperation with various medical facilities.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

INFORMATION

Contact the Human, Health and Public Service Careers Department, Gannon Vocational-Technical Center, Room 1750, telephone (517) 483-1410.

REQUIREMENTS

TOTAL: 13.5 Credits

CODE	TITLE	CREDIT HOURS
AHCC 111	EKG for Health Care Providers	1
AHCC 112	Health Law and Ethics	2
CHSE 101	Acute Care Nurse Assis/Orderly	6
CHSE 121	Medical Term Allied Health I	2.5
CHSE 143	Phlebotomy Technician	2

MINIMUM TOTAL

13.5

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II
AHCC 112	AHCC 111
CHSE 101	CHSE 143
CHSE 121	

**NURSING, LPN OPTION
CERTIFICATE OF ACHIEVEMENT**

Curriculum Code: 0235 (Effective Fall 2001–Summer 2002)

The Practical Nursing Program at Lansing Community College implements the ladder concept. There are specific prerequisites required for entry into the program. Building on these prerequisites, a student completing the first year receives a Certificate of Achievement and is eligible to take a national examination for Licensed Practical Nurse (LPN).

The Licensed Practical Nurse (LPN) Program prepares an individual to, with supervision from the Registered Nurse, implement a plan of care for clients in a variety of health care settings. The education and scope of practice of the LPN is determined by state law. Successful completion of the National Council Licensing Examination-Practical Nurse is required.

This is a selective admission program. In order to be considered as a candidate for this program, students must meet basic admission requirements beyond those required for admission to the college. Many of the courses for this program are open only to students officially admitted to the Nursing Program.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

INFORMATION

The admission and/or graduation requirements for this program may change each academic year. **The program requirements below apply only to those students who have been admitted to the program for the 2001/2002 academic year.** For the most recent and complete information, interested students should contact the Admissions Office, Room 2200, Gannon Vocational-Technical Center, telephone (517) 483-1254.

REQUIREMENTS FOR ADMISSION TO THE NURSING PROGRAM, LPN AND RN OPTIONS

For current information about admission requirements, students must contact the Admissions Office, Room 2200, Gannon Vocational-Technical Center, telephone (517) 483-1254.

REQUIREMENTS		TOTAL: 44 CREDITS
CODE	TITLE	CREDIT HOURS
BIOL 201	Human Anatomy	4
BIOL 202	Human Physiology	4
NURS 150	Fundamentals in Nursing Care (<i>See Note 1</i>)	9
NURS 160	Acute Nursing Care	6
NURS 165	Maternity Nursing Care	5
NURS 200	Pharmacology (<i>See Note 1</i>)	3
PFHW 163	Healthy Lifestyles	2
PSYC 200	Introduction to Psychology	4
PSYC 205	Human Growth and Development	3
WRIT 121	Composition I (<i>See Note 3</i>)	4
MINIMUM TOTAL		44

NOTES:

- NURS 200 may be taken up to two years prior to admission to the Nursing Program or concurrently with NURS 150.
- Current Basic Cardiac Life Support Certification (BCLS) is required throughout the program (EMSB 102 or American Red Cross "Provider C".)
- WRIT 121 is the minimum writing requirement. It may be replaced by WRIT 122, WRIT 131, or WRIT 132.

SUGGESTED COURSE SEQUENCE

Courses listed in Semester I below must be completed prior to admission to the Nursing program as part of the Phase I requirements for admission. MATH 112—Intermediate Algebra is also required for admission and may be waived by successfully passing a proficiency exam. Although students are admitted to the program in June, they will be assigned to begin Semester II in either fall or spring semester. A student may not begin a new semester until she or he has successfully completed all of the courses listed in a previous sequenced semester. NURS 200 is the only NURS-prefix course that is offered summer semester.

I	II	III
BIOL 201	BIOL 202	NURS 160
PFHW 163	NURS 150	NURS 165
PSYC 200	NURS 200	PSYC 205
WRIT 121		

**NURSING, RN OPTION
ASSOCIATE IN APPLIED SCIENCE DEGREE**

Curriculum Code: 0222 (Effective Fall 2001-Summer 2003)

The Nursing Program at Lansing Community College is a nationally accredited program and implements the ladder concept. There are specific prerequisites required for entry into the program. Building on these prerequisites, a student completing the first year receives a Certificate of Achievement and is eligible to take a national examination for Licensed Practical Nurse (LPN). A student continuing through the second year will receive an associate's degree and is eligible to take the national examination for Registered Nurse (RN).

The Registered Nurse (RN) Program prepares the individual to care for clients of all ages in a variety of health care settings. As an essential member of the health care team, the RN is responsible for developing, implementing and evaluating a plan of care for clients. The RN is required to assist clients in achieving their health goals through effective communication, decision making, problem-solving, management and technological skills. Registered nurses work in hospitals, clinics, offices, nursing homes, and home health care settings, in addition to schools, research facilities, and community agencies. The education and scope of practice of the RN is determined by state law. The student must successfully complete this program and the National Council Licensing Examination-Registered Nurse (NCLEX-RN).

This is a selective admission program. In order to be considered as a candidate for this program, students must meet basic admission requirements beyond those required for admission to the college. Many of the courses for this program are open only to students officially admitted to the Nursing Program.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

The admission and/or graduation requirements for this program may change each academic year. **The program requirements below apply only to those students who have been admitted to the program for the 2001/2002 academic year.** For the most recent and complete information, interested students should contact the Admissions Office, Gannon Vocational-Technical Center, Room 2200, telephone number (517) 483-1254.

REQUIREMENTS FOR ADMISSION TO THE NURSING PROGRAM, LPN AND RN OPTIONS

For current information about admission requirements, students must contact the Admissions Office, Gannon Vocational-Technical Center, Room 2200, telephone number (517) 483-1254.

REQUIREMENTS

TOTAL: 68 CREDITS

CODE	TITLE	CREDIT HOURS
BIOL 201	Human Anatomy	4
BIOL 202	Human Physiology	4
BIOL 203	Microbiology (See Note 1)	3
NURS 150	Fundamentals in Nursing Care (See Note 2)	9
NURS 160	Acute Nursing Care	6
NURS 165	Maternity Nursing Care	5
NURS 200	Pharmacology (See Note 2)	3
NURS 260	Mental Health Nursing Care	5
NURS 265	Pediatric Nursing Care	5
NURS 280	Advanced Chronic Nursing Care	4
NURS 285	Advanced Acute Nursing Care	4
NURS 290	Leadership in Nursing Care	3
PFWW 163	Healthy Lifestyles	2
PSYC 200	Introduction to Psychology	4
PSYC 205	Human Growth and Development	3
WRIT 121	Composition I (See Note 3)	4

LIMITED CHOICE REQUIREMENTS

TOTAL: 6 CREDITS

Complete the indicated number of credits from *each CHOICE* listed below.

CHOICE 1: General Education Core Areas	6 Credits
(See the GENERAL EDUCATION section above)	
Writing Core Area (See Note 4)	0
Speech Communication Core Area	3
Science/Technology Core Area (See Note 4)	0
Global Perspectives and Diversity Core Area	3
Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)	

MINIMUM TOTAL

74

NOTES:

- Although not required for the Associate degree, BIOL 204 is strongly recommended to be taken concurrent with BIOL 203. It will be required for nurses who continue on to a four-year university.
- NURS 200 may be taken up to two years prior to admission into the program or concurrently with NURS 150.
- WRIT 121 is the minimum writing requirement. It may be replaced by WRIT 122, WRIT 131, or WRIT 132.
- Students completing *REQUIREMENTS* have fulfilled the requirements for this Core area.
- Current Basic Cardiac Life Support Certification (BCLS) is required throughout the program (EMSB 102 or American Red Cross "Provider C").
- Licensed Practical Nurses (LPNs) wishing to complete the second year of this curriculum should make an appointment with the nursing faculty to receive individual advising, telephone (517) 483-1410.

SUGGESTED COURSE SEQUENCE

Courses listed in Semester I below must be completed prior to admission to the Nursing program as part of the Phase I requirements for admission. MATH 112—Intermediate Algebra is also required for admission and may be waived by successfully passing a proficiency exam. Although students are admitted to the program in June, they will be assigned to begin Semester II in either fall or spring semester. A student may not begin a new semester until she or he has successfully completed all of the courses listed in a previous sequenced semester. NURS 200 is the only NURS-prefix course that is offered summer semester.

I	II	III	IV
BIOL 201	BIOL 202	NURS 160	BIOL 203
PFWW 163	NURS 150	NURS 165	NURS 260
PSYC 200	NURS 200	PSYC 205	NURS 265
WRIT 121			

V

- NURS 280
- NURS 285
- NURS 290
- Lim.Ch.
- Lim.Ch.

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**PARAMEDIC
CERTIFICATE OF ACHIEVEMENT****Curriculum Code: 0272 (Effective Fall 2001–Summer 2002)**

This certificate program prepares the Basic EMT in advanced techniques of administering care in life-threatening conditions. Paramedics are employed by advanced life support ambulances and in emergency departments and critical care units of hospitals. State licensing is required.

This is a selective admission program. In order to be considered as a candidate for this program, students must meet basic admission requirements beyond those required for admission to the college. Many of the courses for this program are open only to students officially admitted to the Paramedic Program.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

INFORMATION

The admission and/or graduation requirements for this program may change each academic year. **The program requirements below apply only to those students who have been admitted to the program for the 2001/2002 academic year.** For the most recent and complete information, interested students should contact the Admissions Office, Gannon Vocational-Technical Center, Room 2200, telephone number (517) 483-1254.

REQUIREMENTS FOR ADMISSION TO THE PARAMEDIC PROGRAM

For current information about admission requirements, students must contact the Admissions Office, Gannon Vocational-Technical Center, Room 2200, telephone number (517) 483-1254.

REQUIREMENTS**TOTAL: 38 CREDITS**

CODE	TITLE	CREDIT HOURS
PARA 221	Paramedic Medical Trauma I	5
PARA 222	Paramedic Medical Trauma II	5
PARA 231	Paramedic Cardiology I	3
PARA 232	Paramedic Cardiology II	3
PARA 241	Paramedic Pharmacology I	3
PARA 242	Paramedic Pharmacology II	3
PARA 251	Paramedic Skills I	2
PARA 252	Paramedic Skills II	2
PARA 261	Paramedic Clinical I	3
PARA 262	Paramedic Clinical II	4
PARA 263	Paramedic Internship	3
PFHW 111	Emergency Services Fitness III	1
PFHW 112	Emergency Services Fitness IV	1
MINIMUM TOTAL		38

NOTE:

1. Complete each course required with a minimum 3.0 grade or better in order to earn a Certificate of Achievement in the Paramedic Program.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II
PARA 221	PARA 222
PARA 231	PARA 232
PARA 241	PARA 242
PARA 251	PARA 252
PARA 261	PARA 262
PFHW 111	PARA 263
	PFHW 112

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**RADIOLOGIC TECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE DEGREE**

Curriculum Code: 0196 (Effective Fall 2001–Summer 2003)

Radiologic technologists, also called radiographers, operate X-ray equipment under the direction of a physician, taking radiographs of internal parts of the body. Most often radiologic technologists are employed in hospitals, clinics and physician offices. Graduates of the program will be eligible for examination by the American Registry of Radiologic Technologists (ARRT). **Not all courses in this program transfer to all colleges.** Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

This is a selective admission program. In order to be considered as a candidate for this program, students must meet basic admission requirements beyond those required for admission to the college. Many of the courses for this program are open only to students officially admitted to the Radiologic Technology Program.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page B of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

The admission and/or graduation requirements for this program may change each academic year. **The program requirements below apply only to those students who have been admitted to the program for the 2001/2002 academic year.** For the most recent and complete information, interested students should contact the Admissions Office, Gannon Vocational-Technical Center, Room 2200, telephone number (517) 483-1254.

REQUIREMENTS FOR ADMISSION TO THE RADIOLOGIC TECHNOLOGY PROGRAM

For current information about admission requirements, students must contact the Admissions Office, Gannon Vocational-Technical Center, Room 2200, telephone number (517) 483-1254.

REQUIREMENTS

TOTAL: 66 CREDITS

CODE	TITLE	CREDIT HOURS
AHCC 112	Health Law and Ethics	2
BIOL 201	Human Anatomy	4
BIOL 202	Human Physiology	4
CABS 102	Microcomputers for Non-Majors	2
IRXT 100	Introduction to Imaging	4
IRXT 111	Radiographic Positioning I	5
IRXT 112	Radiographic Positioning II	4
IRXT 113	Additional RAD Procedures	1
IRXT 114	Cross-Sectional Anatomy	3
IRXT 121	Radiographic Exposure I	3
IRXT 122	Radiographic Exposure II	2
IRXT 131	Radiologic Physics	3
IRXT 132	Radiobiology and Protection	2
IRXT 200	Intro/Radiologic Pathology	2
IRXT 202	Clinical Practice I	5
IRXT 204	Clinical Practice II-S	3
IRXT 214	Comprehensive Experience I	6
IRXT 215	Comprehensive Experience II	6
IRXT 219	Imaging Update	1
IRXT 236	Comprehensive Experience III-S	4

LIMITED CHOICE REQUIREMENTS

TOTAL: 9 CREDITS

Complete the indicated number of credits from each CHOICE listed below.

CHOICE 1: General Education Core Areas (See the GENERAL EDUCATION section above)	9 Credits
Writing Core Area	3
Speech Communication Core Area	3
Science/Technology Core Area (See Note 1)	0
Global Perspectives and Diversity Core Area	3
Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)	

MINIMUM TOTAL 75

NOTE:

1. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.

SUGGESTED COURSE SEQUENCE

Courses listed in Semester I below must be completed prior to admission to the Radiologic Technology Program as part of the Phase I requirements for admission. MATH 112—Intermediate Algebra is also required for admission and may be waived by successfully passing the MATH 112 proficiency exam. The program admits students in the fall semester only. Students who for any reason are unable to follow the course sequence suggested below (for example, those who have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II (FALL)	III (SPRING)	IV (SUMMER)
BIOL 201	BIOL 202 IRXT 100 IRXT 111 IRXT 121	CABS 102 IRXT 112 IRXT 122 IRXT 202	AHCC 112 IRXT 113 IRXT 204
V (FALL)	VI (SPRING)	VII (SUMMER)	
IRXT 131 IRXT 200 IRXT 214 Lim.Ch.	IRXT 114 IRXT 132 IRXT 215 Lim.Ch.	IRXT 219 IRXT 236 Lim.Ch.	

STUDENTS ARE RESPONSIBLE FOR COMPLETING ALL REQUIREMENTS AS STATED. THE ONLY OFFICIAL DOCUMENTATION OF PROGRAM COMPLETION STATUS IS AN AUDIT CONDUCTED BY THE REGISTRAR'S OFFICE THAT IS INITIATED WHEN STUDENTS APPLY FOR A DEGREE OR CERTIFICATE. STUDENTS ARE EXPECTED TO APPLY ONE SEMESTER PRIOR TO THE SEMESTER THEY INTEND TO GRADUATE.

**SURGICAL TECHNOLOGY
CERTIFICATE OF ACHIEVEMENT**

Curriculum Code: 0216 (Effective Fall 2001–Summer 2002)

A surgical technologist assists the surgeon in the operating room as a member of the surgical team. Some of the duties of the surgical technologist include preparing the operating room for the surgical procedure, preparing all sterile areas and instruments for use, assisting with sterile draping, gowning and gloving, and handing sterile instruments to the surgical assistant or surgeon. The surgical technologist may work in a hospital operating room, a surgeon's private office, a surgical outpatient clinic, and possibly in an emergency room or obstetrical delivery room. The surgical technologist may become certified through a national exam offered by the Association of Surgical Technologists.

This is a selective admission program. In order to be considered as a candidate for this program, students must meet basic admission requirements beyond those required for admission to the college. Many of the courses for this program are open only to students officially admitted to the Surgical Technology Program.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

INFORMATION

The admission and/or graduation requirements for this program may change each academic year. The program requirements below apply only to those students who have been admitted to the program for the 2001/2002 academic year. For the most recent and complete information, interested students should contact the Admissions Office, Gannon Vocational-Technical Center, Room 2200, telephone number (517) 483-1254.

REQUIREMENTS FOR ADMISSION TO THE SURGICAL TECHNOLOGY PROGRAM

For current information about admission requirements, students must contact the Admissions Office, Gannon Vocational-Technical Center, Room 2200, telephone number (517) 483-1254.

REQUIREMENTS

TOTAL: 36.5 CREDITS

CODE	TITLE	CREDIT HOURS
AHCC 106	Introduction to Pathology (See Note 1)	2
AHCC 110	Pharmacology-Allied Health (See Note 1)	2
AHCC 112	Health Law and Ethics (See Note 1)	2
BIOL 145	Introductory Anat & Physiology	4
CHSE 121	Medical Term Allied Health I	2.5
SURG 100	Fundamental Surgical Tech	3
SURG 101	The Surgical Patient	2
SURG 103	Surgical Asepsis (See Note 1)	2
SURG 104	Operative Procedures	6
SURG 121	Applied Surg Techniques I	1
SURG 122	Applied Surg Techniques II	3
SURG 123	Applied Surg Techniques III	5
SURG 124	Applied Surg Techniques IV	2
MINIMUM TOTAL		36.5

NOTES:

1. This course may be taken prior to admission to the program.
2. Students must complete all required courses with a minimum 2.5 grade or better.

SUGGESTED COURSE SEQUENCE

Courses listed in Semester I below must be completed prior to admission to the Surgical Technology program as part of the Phase I requirements for admission. Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III
BIOL 145	AHCC 106	AHCC 112
CHSE 121	AHCC 110	SURG 104
	SURG 100	SURG 123
	SURG 101	SURG 124
	SURG 103	
	SURG 121	
	SURG 122	

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**HEAT & AIR COND/BUILDING MAINT
ASSOCIATE IN APPLIED SCIENCE DEGREE**

Curriculum Code: 0836 (Effective Fall 2001–Summer 2006)

Students in this program may select either the Heating, Air Conditioning and Refrigeration specialty (HVAC/R) or the Building Maintenance specialty. HVAC/R technicians work on systems that control temperature, humidity, and air quality of enclosed spaces. They are required to design, install, service, and maintain the various types of equipment used to control human comfort, preservation of food products, critical medical supplies, and computer and mechanical processes in residential, commercial, industrial, and institutional environments. Building maintenance technicians must have most of these same skills in addition to being able to maintain the aesthetic and structural integrity of buildings. They may also be responsible for maintenance and upkeep of mechanical, plumbing, and electrical equipment, as well as grounds-keeping. They should be versatile enough to do routine painting, drywall, plastering, woodworking, pool maintenance, as well as some custodial work. Both of the above technicians must have a strong mechanical aptitude, be self-motivated, willing to accept challenges, and have a structured approach to problem solving. They should also have good communication skills, the ability to work well with others, and understand all aspects of the construction trade. Employment opportunities vary with each specialty.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Technology Careers Department, Gannon Vocational-Technical Center, Room 1380, telephone number (517) 483-1336.

REQUIREMENTS

TOTAL: 39 CREDITS

CODE	TITLE	CREDIT HOURS
HVAC 100	Fundamentals of HVAC	3
HVAC 105	Sheet Metal Fabrication/Instal	2
HVAC 110	Applied Electricity I	2
HVAC 111	Applied Electricity II	2
HVAC 120	Heating I	4
HVAC 130	Air Conditioning I	4
HVAC 211	Schematics	3
HVAC 220	Heating II	4
HVAC 221	Introduction to Hydronics	3
HVAC 230	Air Conditioning II	4
HVAC 240	Refrigeration I	4
HVAC 241	Refrigeration II	4

LIMITED CHOICE REQUIREMENTS

TOTAL: 30 CREDITS

Complete the indicated number of credits from *each* CHOICE listed below.

CHOICE 1: General Education Core Areas 12 Credits

(See the *GENERAL EDUCATION* section above)

Writing Core Area	3
Speech Communication Core Area	3
Science/Technology Core Area	3
Global Perspectives and Diversity Core Area	3
Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)	

CHOICE 2: Specialty 18–19 Credits

Subchoice 2A: HVAC/R Technician

BLDT 103	Structural Technician	4
BLDT 121	Residential Framing	4
HVAC 201	Mechanical Code	4
HVAC 231	Heat Pump	3
HVAC 250	Pneumatic Control	3

Subchoice 2B: Building Maintenance Technician

BLDT 101	Basic Woodworking (See Note 1)	2
BLDT 121	Residential Framing	4
BLDT 126	Interior Carpentry	4
BLDT 132	General Home Maintenance	2
ELTE 112	Basic Wiring Installation	2
HORT 105	Pest/Problem Ornamental Plants	2
LAND 133	Home Landscape Maintenance	3

MINIMUM TOTAL 69

NOTES:

1. Students who have experience in woodworking may be able to take an individual project lab course (BLDR 110 or BLDR 112) in place of BLDT 101.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
HVAC 100	HVAC 111	HVAC 220	HVAC 221
HVAC 105	HVAC 120	HVAC 230	HVAC 241
HVAC 110	HVAC 130	HVAC 240	Lim. Ch. 1
Lim. Ch. 1	HVAC 211	Lim. Ch. 1	Lim. Ch. 2
Lim. Ch. 2	Lim. Ch. 1	Lim. Ch. 2	Lim. Ch. 2
Lim. Ch. 2	Lim. Ch. 2	Lim. Ch. 2	

STUDENTS ARE RESPONSIBLE FOR COMPLETING ALL REQUIREMENTS AS STATED. THE ONLY OFFICIAL DOCUMENTATION OF PROGRAM COMPLETION STATUS IS AN AUDIT CONDUCTED BY THE REGISTRAR'S OFFICE THAT IS INITIATED WHEN STUDENTS APPLY FOR A DEGREE OR CERTIFICATE. STUDENTS ARE EXPECTED TO APPLY ONE SEMESTER PRIOR TO THE SEMESTER THEY INTEND TO GRADUATE.

**HEAT & AIR COND/BUILDING MAINT
CERTIFICATE OF ACHIEVEMENT**

Curriculum Code: 0832 (Effective Fall 2001–Summer 2006)

Students in this program may select either the Heating, Air Conditioning and Refrigeration specialty (HVAC/R) or the Building Maintenance specialty. Students selecting the HVAC/R option will receive instruction on how to install, service, and maintain heating, air conditioning, and refrigeration systems, including sheet metal and electrical, to prepare for entry-level positions. Students selecting the building maintenance option will learn through practical hands-on courses that will provide them with the necessary technical knowledge and skills needed for an entry-level position in the maintenance of residential and commercial buildings.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

INFORMATION

Contact the Technology Careers Department, Gannon Vocational-Technical Center, Room 1380, telephone number (517) 483-1336.

REQUIREMENTS

TOTAL: 24 CREDITS

CODE	TITLE	CREDIT HOURS
HVAC 100	Fundamentals of HVAC	3
HVAC 105	Sheet Metal Fabrication/Instal	2
HVAC 110	Applied Electricity I	2
HVAC 111	Applied Electricity II	2
HVAC 120	Heating I	4
HVAC 130	Air Conditioning I	4
HVAC 211	Schematics	3
HVAC 220	Heating II	4

LIMITED CHOICE REQUIREMENTS

TOTAL: 12–16 CREDITS

Complete the indicated number of credits from *each CHOICE* listed below.

CHOICE 1: HVAC Specialty (Choose 1 Subchoice) 12–16 Credits

Subchoice 1A: HVAC/R Technician

HVAC 201	Mechanical Code	4
HVAC 230	Air Conditioning II	4
HVAC 240	Refrigeration I	4
HVAC 241	Refrigeration II	4

Subchoice 1B: Building Maintenance Technician

BLDT 101	Basic Woodworking (See Note 1)	2
BLDT 121	Residential Framing	4
BLDT 126	Interior Carpentry	4
BLDT 132	General Home Maintenance	2

MINIMUM TOTAL 36

NOTES:

- Students who have experience in woodworking may be able to take an individual project lab course (BLDR 110 or BLDR 112) in place of BLDT 101.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

HVAC/R Technician

I	II	III	IV
HVAC 100	HVAC 111	HVAC 201	HVAC 241
HVAC 105	HVAC 120	HVAC 220	
HVAC 110	HVAC 130	HVAC 230	
	HVAC 211	HVAC 240	

Building Maintenance Technician

I	II	III	IV
HVAC 100	HVAC 111	BLDT 101	BLDT 126
HVAC 105	HVAC 120	BLDT 121	BLDT 132
HVAC 110	HVAC 130	HVAC 220	
	HVAC 211		

**HOTEL-MOTEL/FOOD MANAGEMENT
ASSOCIATE IN BUSINESS DEGREE**

Curriculum Code: 0711 (Effective Fall 2001–Summer 2006)

A hotel-motel or food service manager directs and coordinates operations such as housekeeping, food service, accounting, and guest room services in facilities. Graduates of this program are prepared to work in hotels, motels, and other lodging facilities in a variety of environments. A food management specialist serves the public's need for meals away from home through their particular establishment's food and service. Expansions of chains and franchises have opened opportunities for advancement. Graduates of this program are prepared to work in restaurants, clubs, resorts, institutional food service, and similar establishments. **Not all courses in this program transfer to all colleges.** Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Business Careers Department, Old Central Building, Room 210, telephone number (517) 483-1522.

REQUIREMENTS		TOTAL: 43 CREDITS
CODE	TITLE	CREDIT HOURS
ACCG 101	Accounting Info for Management	3
CABS 110	Microsoft Office	3
CISB 200	Info Sys Tech/Problem Solving	3
HMFS 101	Intro Hospitality/Tourism	3
HMFS 110	Sanitation and Safety	3
HMFS 131	Food and Beverage Management	4
HMFS 190	Internship and Seminar	3
HMFS 204	Hospitality HR Management	3
HMFS 205	Hospitality Management	3
HMFS 215	Hospitality Sales/Marketing	3
HMFS 232	Food and Labor Cost Control	3
MGMT 150	Managing Customer Relations	3
SPCH 110	Oral Communic in the Workplace	3
WRIT 127	Business Writing	3

LIMITED CHOICE REQUIREMENTS TOTAL: 21–23 CREDITS
Complete the indicated number of credits from *each CHOICE* listed below.

CHOICE 1: General Education Core Areas	3 Credits
(See the <i>GENERAL EDUCATION</i> section above)	
Writing Core Area (See Note 1)	0
Speech Communication Core Area (See Note 1)	0
Science/Technology Core Area (See Note 1)	0
Global Perspectives and Diversity Core Area	3
Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)	

CHOICE 2: Specialization (Choose 1 Subchoice)	18–20 Credits
Subchoice 2A: Hotel-Motel Management Specialist	
HMFS 203 Hospitality Law	3
HMFS 206 Rooms Division Management	3
HMFS 229 Convention/Meeting Management	3
HMFS 240 Current Topics in Hospitality	3
MGMT 228 Organizational Behavior	3
MGMT 239 Time Management	3
Subchoice 2B: Food Management Specialist	
HMFS 132 Food Production	4
HMFS 135 Hospitality Purchasing	3
HMFS 170 Menu Management and Design	3
HMFS 203 Hospitality Law	3
HMFS 254 Mixology	4
MGMT 228 Organizational Behavior	3
Subchoice 2C: Culinary Arts Specialist	
HMFS 132 Food Production	4
HMFS 135 Hospitality Purchasing	3
HMFS 137 Catering Management	4
HMFS 170 Menu Management and Design	3
HMFS 275 Bakery Products	2
HMFS 280 Food Decorating Garnishes	3
MINIMUM TOTAL	64

- NOTE:**
- Students completing *REQUIREMENTS* have fulfilled the requirements for this Core area.
 - The Gourmet series courses (HMFS 260–HMFS 274) may be used as a substitution option for Subchoices 2A, 2B, or 2C with the approval of the academic team leader.

SUGGESTED COURSE SEQUENCE
Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
CABS 110	ACCG 101	CISB 200	HMFS 232
HMFS 101	HMFS 131	HMFS 190	Lim.Ch.
HMFS 110	HMFS 204	HMFS 205	Lim.Ch.
SPCH 110	MGMT 150	HMFS 215	Lim.Ch.
Lim.Ch.	WRIT 127	Lim.Ch.	Lim.Ch.
	Lim.Ch.		

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**CHILD DEVELOPMENT
ASSOCIATE IN APPLIED SCIENCE**

Curriculum Code: 0108 (Effective Fall 2001–Summer 2006)

This degree program prepares individuals to work in child care as a teacher, teacher assistant, or program director. Students learn to plan and implement high quality, developmentally appropriate programs for all ages of children, infants through school-age, in both centers and family child care homes. Graduates of the associate degree program meet the educational requirements for child care center program directors as specified by the State of Michigan Child Day Care Center Licensing Regulations. The program involves several semesters of daytime field work in child care settings. **Not all courses in this program transfer to all colleges.** Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Human, Health and Public Service Careers Department, Gannon Vocational-Technical Center, Room 1750, telephone number (517) 483-1410.

REQUIREMENTS

TOTAL: 47 CREDITS

CODE	TITLE	CREDIT HOURS
CHDV 101	Child Growth/Devel: 0-5 Years	4
CHDV 111	Child Guidance/Communication	4
CHDV 112	Family Relationship/Child Care	2
CHDV 113	Health/Safety Issue:Child Care	2
CHDV 188	Caring/Children/Special Needs	2
CHDV 220	Preschool Curric/Learning Env	4
CHDV 221	Infant-Toddler Program Dev	4
CHDV 222	School-Age Child Care Prog Dev	2
CHDV 230	Child Care Center Admin	2
CHDV 284	Child Development Practicum	5
ISCI 121	Integrated Sci for Education I	4
SOCL 120	Introduction to Sociology	4
WRIT 121	Composition I	4
WRIT 122	Composition II	4

LIMITED CHOICE REQUIREMENTS

TOTAL: 18 CREDITS

Complete the indicated number of credits from *each CHOICE* listed below.

CHOICE 1: General Education Core Areas 3 Credits

(See the *GENERAL EDUCATION* section above)

Writing Core Area (See Note 2)	0
Speech Communication Core Area	3
Science/Technology Core Area (See Note 2)	0
Global Perspectives and Diversity Core Area (See Note 2)	0
Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)	0

CHOICE 2: Science/Mathematics (See Note 3) 4 Credits

CHOICE 3: Humanities (See Note 3) 8 Credits

CHOICE 4: Professional Related Courses (See Note 4) 3 Credits

EMSB 102	CPR for Health Care Prof	.5
EMSB 106	Infant/Child CPR	.25
HUSE 100	Introduction to Human Services	3
HUSE 101	Personal Dimensions/Human Serv	2
HUSE 110	Intra/Child Abuse and Neglect	3
HUSE 112	Intra/Addctn/Substance Abuse	3
HUSE 120	Introduction/Family Violence	2

MINIMUM TOTAL 65

NOTES:

- CHDV 284 requires departmental approval. Applications must be submitted one semester in advance to be admitted to CHDV 284. Applications for departmental approval are available in the Human, Health and Public Services Careers Department, Gannon Vocational-Technical Center, Room 1750.
- Students completing *REQUIREMENTS* have fulfilled the requirements for this Core area.
- See the MACRAO Transfer Agreement in the "Transfer Information" section of this catalog for appropriate science/mathematics, and humanities courses. BIOL 145 is strongly recommended as the science requirement.
- Students may also choose from CHDV-prefix courses not already used to meet degree requirements.
- CHDV 111 and CHDV 220 must be completed with a minimum 2.5 grade or better. All other required CHDV course must be completed with a minimum 2.0 grade or better.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
CHDV 101	CHDV 113	CHDV 112	CHDV 230
CHDV 111	CHDV 220	CHDV 188	CHDV 284
ISCI 121	CHDV 222	CHDV 221	SOCL 120
WRIT 121	WRIT 122	Lim.Ch.2	Lim.Ch.1
Lim.Ch.4	Lim.Ch.3	Lim.Ch.3	Lim.Ch.4

**CDA CREDENTIAL TRAINING
CERTIFICATE OF COMPLETION**

Curriculum Code: 0921 (Effective Fall 2001–Summer 2006)

The CDA (Child Development Associate) Credential is a national credential earned by individuals working with children age five and younger in a group child care setting. This certificate provides the training required for CDA credential assessment.

REQUIREMENTS

TOTAL: 11 CREDITS

CODE	TITLE	CREDIT HOURS
CHDV 101	Child Growth/Devel: 0-5 Years	4
CHDV 111	Child Guidance/Communication	4
CHDV 251	CDA Credentialing Preparation	3

LIMITED CHOICE REQUIREMENTS

TOTAL: 4 CREDITS

Complete the indicated number of credits from *each CHOICE* listed below.

CHOICE 1: 4 Credits

CHDV 220	Preschool Curric/Learning Env	4
CHDV 221	Infant-Toddler Program Dev	4

MINIMUM TOTAL 15

NOTE:

- Each course must be completed with a 2.0 minimum grade to be counted toward certificate completion.

SUGGESTED COURSE SEQUENCE

I	II	III
CHDV 101	Lim.Ch.	CHDV 251
CHDV 111		

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**CHILD DEVELOPMENT
CERTIFICATE OF ACHIEVEMENT**

Curriculum Code: 0133 (Effective Fall 2001–Summer 2006)

The certificate program consists of child development course work. It prepares individuals for positions as assistant teachers or teachers in child care programs. Courses for the certificate can be applied toward the associate degree. This curriculum requires three semesters to complete, not including summer.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

INFORMATION

Contact the Human, Health and Public Service Careers Department, Gannon Vocational-Technical Center, Room 1750, telephone number (517) 483-1410.

REQUIREMENTS

TOTAL: 35 CREDITS

CODE	TITLE	CREDIT HOURS
CHDV 101	Child Growth/Devel: 0-5 Years	4
CHDV 111	Child Guidance/Communication	4
CHDV 112	Family Relationship/Child Care	2
CHDV 113	Health/Safety Issue:Child Care	2
CHDV 188	Caring/Children/Special Needs	2
CHDV 220	Preschool Curric/Learning Env	4
CHDV 221	Infant-Toddler Program Dev	4
CHDV 222	School-Age Child Care Prog Dev	2
CHDV 230	Child Care Center Admin	2
CHDV 284	Child Development Practicum	5
WRIT 121	Composition I	4

LIMITED CHOICE REQUIREMENTS

TOTAL: 3 CREDITS

Complete the indicated number of credits from each CHOICE listed below.

CHOICE 1:	Professional Related Courses (See Note 2)	3 Credits
EMS102	CPR for Health Care Prof	.5
EMS106	Infant/Child CPR	.25
HUSE 100	Introduction to Human Services	3
HUSE 101	Personal Dimensions/Human Serv	2
HUSE 110	Intro/Child Abuse and Neglect	3
HUSE 112	Intro/Addctn/Substance Abuse	3
HUSE 120	Introduction/Family Violence	2
MINIMUM TOTAL		38

NOTES:

- CHDV 284 requires departmental approval. Applications must be submitted one semester in advance to be admitted to CHDV 284. Applications for departmental approval are available in the Human, Health and Public Services Careers Department, Gannon Vocational-Technical Center, Room 1750.
- Students may also choose from CHDV-prefix courses not already used to meet degree requirements.
- CHDV 111 and CHDV 220 must be completed with a minimum 2.5 grade or better. Other required CHDV course must be completed with a minimum 2.0 grade or better.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III
CHDV 101	CHDV 112	CHDV 230
CHDV 111	CHDV 113	CHDV 284
CHDV 221	CHDV 188	Lim.Ch.
WRIT 121	CHDV 220	Lim.Ch.
	CHDV 222	

**GERONTOLOGY
CERTIFICATE OF ACHIEVEMENT**

Curriculum Code: 0152 (Effective Fall 2001–Summer 2006)

The certificate program consists of courses in aging and human services. It is designed for persons who have achieved a degree and wish to focus their skills in gerontology. Two semesters of field placement are included. It takes four semesters to complete this curriculum, not including summers.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

INFORMATION

Contact the Human, Health and Public Service Careers Department, Gannon Vocational-Technical Center, Room 1750, telephone number (517) 483-1410.

REQUIREMENTS

TOTAL: 29 CREDITS

CODE	TITLE	CREDIT HOURS
GERO 100	Introduction to Human Aging	3
GERO 101	Programs/Services for Aging	3
GERO 203	Physical/Mental Health Aging	3
GERO 282	Gerontology Practicum I (See Note 1)	4
GERO 284	Gerontology Practicum II	4
HUSE 100	Introduction to Human Services	3
HUSE 101	Personal Dimensions/Human Serv	2
SOWK 203	Social Work Interviewing	3
WRIT 121	Composition I	4

LIMITED CHOICE REQUIREMENTS

TOTAL: 3 CREDITS

Complete the indicated number of credits from each CHOICE listed below.

CHOICE 1:	Professional Related Courses (See Note 2)	3 Credits
MINIMUM TOTAL		32

NOTES:

- There is an application process and guidelines for admission into field placement/practicum. Students should meet with a program advisor to assist in developing a plan to meet field placement prerequisites. Field placement applications are due by April 1 for admission to Fall field placement. Application packets with current requirements are available beginning in January from the Human, Health and Public Service Careers Department, Gannon Vocational-Technical Center, Room 1750. Contact a program advisor for further information.
- Students may choose from any GERO-prefix courses numbered GERO 128-199. A maximum of 3 credits of GERO 191-Seminar: Special Subjects may be used to satisfy this requirement.
- All required GERO, HUSE, and SOWK courses must be completed with a minimum 2.5 grade or better for this certificate.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
GERO 100	HUSE 101	GERO 101	GERO 284
GERO 203	SOWK 203	GERO 282	Lim.Ch.
HUSE 100	WRIT 121	Lim.Ch.	

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**HUMAN SERVICES
ASSOCIATE IN APPLIED SCIENCE**

Curriculum Code: 0915 (Effective Fall 2001–Summer 2006)

Human Services workers assist professional staff in social service agencies to meet human needs. Responsibilities include helping individuals and families identify needs, cope with problems, and obtain services; leading group activities; and assisting individuals in meeting everyday living skills. Students choose from four areas of specialization. Gerontology studies the process of aging and prepares individuals to work with older adults and their families. The Substance Abuse area prepares individuals to work in agencies with substance abuse prevention or treatment components. The Family Emphasis area focuses on various family situations and prepares individuals to work in a wide range of family and youth agencies. The social work option prepares students to transfer to a Bachelor of Social Work Program. Two consecutive semesters of field work during the last year provide work-site experience. Some transfer opportunities exist, however **not all courses in this program transfer to all colleges.** Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Human, Health and Public Service Careers Department, Gannon Vocational-Technical Center, Room 1750, telephone number (517) 483-1410.

REQUIREMENTS

TOTAL: 33 CREDITS

CODE	TITLE	CREDIT HOURS
BIOL 145	Introductory Anat & Physiology	4
GERO 100	Introduction to Human Aging	3
HUSE 100	Introduction to Human Services	3
HUSE 101	Personal Dimensions/Human Serv	2
HUSE 112	Intro/Addctn/Substance Abuse	3
PSYC 200	Introduction to Psychology	4
SOCL 120	Introduction to Sociology	4
SOWK 203	Social Work Interviewing	3
SPCH 120	Dynamics of Communication	3
WRIT 121	Composition I	4

LIMITED CHOICE REQUIREMENTS

TOTAL: 36 CREDITS

Complete the indicated number of credits from *each CHOICE* listed below.

CHOICE 1: General Education Core Areas 4 Credits

(See the *GENERAL EDUCATION* section above)

Writing Core Area (See Note 1)	0
Speech Communication Core Area (See Note 1)	0
Science/Technology Core Area (See Note 2)	4
Global Perspectives and Diversity Core Area (See Note 1)	0
Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)	

CHOICE 2: Humanities (See Note 3) 8 Credits

CHOICE 3: English Composition 4 Credits

ENGL 122	Writing: Literature and Ideas	4
WRIT 122	Composition II	4

CHOICE 4: Specialization (Choose one subchoice) 20 Credits

Subchoice 4A: Gerontology (See Note 4)

GERO 101	Programs/Services for Aging	3
GERO 203	Physical/Mental Health Aging	3
GERO 282	Gerontology Practicum I (See Note 5)	4
GERO 284	Gerontology Practicum II	4

Subchoice 4B: Substance Abuse

HUSE 240	Substance Abuse: Spec Pop/Adol	3
HUSE 241	Substance Abuse Prevention	3
HUSE 242	Chemically Dependent Family	3
HUSE 244	Sub Abuse: Treatment, Intrv	3
HUSE 286	Substance Abuse Practicum I (See Note 5)	4
HUSE 288	Substance Abuse Practicum II	4

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Subchoice 4C: Family Emphasis (See Note 6)

HUSE 282	Human Services Practicum I (See Note 5)	4
HUSE 284	Human Services Practicum II	4
SOCL 254	Marriage and Family	3
SOCL 260	Minority Groups	3

Subchoice 4D: Social Work Transfer (See Note 9)

HUSE 282	Human Services Practicum I (See Note 5)	4
HUSE 284	Human Services Practicum II	4
POLS 120	American Political System	4
SOWK 101	Introduction to Social Work	3
SOWK 205	Social Welfare	3

MINIMUM TOTAL

69

NOTES:

- Students completing *REQUIREMENTS* have fulfilled the requirements for this Core area.
- Students must select a four-credit General Education Science/Technology Core course that will also satisfy the Science/Mathematics transfer requirement for MACRAO. See the MACRAO Transfer Agreement in the *Transfer Information* section of this catalog.
- See the MACRAO Transfer Agreement in the *Transfer Information* section of this catalog for appropriate humanities courses.
- In addition to the courses listed in Subchoice 4A, students must also complete three credits of departmentally approved GERO electives and three credits of HUSE electives that are not already used to meet degree requirements. Students must consult with a Human Services Program Advisor regarding course selection. A maximum of 3 credits of GERO 191–Seminar: Special Subjects may be applied toward completion of this degree.
- There is an application process and guidelines for admission into the field placement component. Students should meet with a program advisor to develop a plan to meet field work prerequisites. Applications are due by April 1 for admission to fall field placement. Application packets with current requirements are available beginning in January from the Human, Health and Public Service Careers Department, Gannon Vocational-Technical Center, Room 175. See a Human Services Program Advisor for further information.
- In addition to the courses listed in Subchoice 4C, students must also complete six credits of departmentally approved Human Services area courses that are not already used to meet degree requirements. Students must consult with a Human Services Program Advisor regarding course selection.
- All HUSE, GERO, and SOWK courses used toward this degree must be completed with a minimum 2.5 grade.
- Jobs in the field of Human Services require computer competency. See a program advisor to determine ways to demonstrate this competency.
- In addition to the courses listed in subchoice 4D, students must also complete 2 credits of departmentally approved Social Work Transfer area courses not already used to meet degree requirements. Students must consult with a Human Services Program advisor regarding course selection.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
GERO 100	SOWK 203	BIOL 145	PSYC 200
HUSE 100	WRIT 121	SPCH 120	Lim.Ch.1
HUSE 101	Lim.Ch.2	Lim.Ch.3	Lim.Ch.2
HUSE 112	Lim.Ch.4	Lim.Ch.4	Lim.Ch.4
SOCL 120	Lim.Ch.4	Lim.Ch.4	
Lim.Ch.4			

**SUBSTANCE ABUSE
CERTIFICATE OF ACHIEVEMENT**

Curriculum Code: 0239 (Effective Fall 2001–Summer 2006)

A substance abuse worker is an individual with specialized knowledge and skills in the area of substance abuse, including its causes, treatment, and prevention strategies. The certificate is designed for individuals who have achieved a degree and wish to focus their skills in the substance abuse area. Two semesters of field work are required. It takes five semesters to complete this curriculum.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

INFORMATION

Contact the Human, Health and Public Service Careers Department, Gannon Vocational-Technical Center, Room 1750, telephone number (517) 483-1410.

REQUIREMENTS

TOTAL: 35 CREDITS

CODE	TITLE	CREDIT HOURS
HUSE 100	Introduction to Human Services	3
HUSE 101	Personal Dimensions/Human Serv	2
HUSE 112	Intro/Addctn/Substance Abuse	3
HUSE 240	Substance Abuse: Spec Pop/Adol	3
HUSE 241	Substance Abuse Prevention	3
HUSE 242	Chemically Dependent Family	3
HUSE 244	Sub Abuse:Treatment, Intrv	3
HUSE 288	Substance Abuse Practicum I (See Note 1)	4
HUSE 288	Substance Abuse Practicum II	4
SOWK 203	Social Work Interviewing	3
WRIT 121	Composition I	4

MINIMUM TOTAL

35

NOTES:

1. There is an application process and guidelines for admission into the field placement/practicum component. Students should meet with a program advisor to develop a plan to meet all field work prerequisites. Applications are due by April 1 for admission to Fall field placement. Application packets with current requirements are available beginning in January from the Human, Health and Public Service Careers Department, Gannon Vocational-Technical Center, Room 1750. Contact a program advisor for further information.
2. All required HUSE and SOWK courses must be completed with a minimum 2.5 grade or better.
3. Students should plan to begin this curriculum summer semester.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
HUSE 112	HUSE 100	HUSE 240	HUSE 288
WRIT 121	HUSE 101	HUSE 241	
	HUSE 242	SOWK 203	
	HUSE 244		
<hr/>			
V			
HUSE 288			

STUDENTS ARE RESPONSIBLE FOR COMPLETING ALL REQUIREMENTS AS STATED. THE ONLY OFFICIAL DOCUMENTATION OF PROGRAM COMPLETION STATUS IS AN AUDIT CONDUCTED BY THE REGISTRAR'S OFFICE THAT IS INITIATED WHEN STUDENTS APPLY FOR A DEGREE OR CERTIFICATE. STUDENTS ARE EXPECTED TO APPLY ONE SEMESTER PRIOR TO THE SEMESTER THEY INTEND TO GRADUATE.

**CNC PROGRAMMING
ASSOCIATE IN APPLIED SCIENCE DEGREE**

Curriculum Code: 0266 (Effective Fall 2001–Summer 2006)

Computer numerical control programmers are responsible for writing programs that are used to control automated manufacturing systems and equipment. The programmer is primarily concerned with taking engineering specifications and developing procedures and programmed instructions to manufacture requested components. The CNC programmer must be knowledgeable in many areas such as computer systems, CAD, CAM, manufacturing processes, machine tools and metallurgy. Strong math, communication and problem-solving skills are needed in order to manage the large and diverse amount of information that must be brought together in order to successfully write programs. Because of their many skills, CNC programmers are employed in all industries, including aerospace, textile, agriculture, electronics, and manufacturing.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Technology Careers Department, Gannon Vocational-Technical Center, Room 1380, telephone number (517) 483-1336.

REQUIREMENTS**TOTAL: 46 CREDITS**

CODE	TITLE	CREDIT HOURS
CADD 101	Mechanical Drafting/Basic CAD	4
CADD 131	AutoCAD Basic 2-D	4
CADD 242	Unigraphics Basic	4
CNCP 110	Foundations of CNC Programming	4
CNCP 130	Machine Controls and Setup	4
MACH 105	Machine Tool Survey	3
MACH 110	Machine Tool Technology I	4
MACH 111	Machine Tool Technology II	4
MACH 120	Effect Use Machinery Handbook	4
MACH 135	Metallurgy and Heat Treat	4
MACH 140	Tooling Theory and Practices	4
WRIT 124	Technical Writing	3

LIMITED CHOICE REQUIREMENTS**TOTAL: 20-21 CREDITS**

Complete the indicated number of credits from *each CHOICE* listed below.

CHOICE 1: General Education Core Areas 9 Credits

(See the *GENERAL EDUCATION* section above)

Writing Core Area (See Note 1)	0
Speech Communication Core Area	3
Science/Technology Core Area	3
Global Perspectives and Diversity Core Area	3
Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)	

CHOICE 2: Drafting 3-4 Credits

CADD 104	Descriptive Geometry	4
CADD 110	Industrial Blueprint Reading	3
CADD 252	I-DEAS Parts Modeling	4
CNCP 101	PC Applications for Technology	3
COOP 210	Cooperative Education (Tech)	3

CHOICE 3: Computer-Aided Manufacturing 8 Credits

CNCP 200	Unigraphics NC	4
CNCP 210	Mastercam	4
CNCP 215	Generative Machining	4
CNCP 220	Gibbs Cam	4

MINIMUM TOTAL 66**NOTE:**

1. Students completing *REQUIREMENTS* have fulfilled the requirements for this Core area.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
CADD 101	CADD 131	CADD 242	Lim.Ch
MACH 105	CNCP 110	CNCP 130	Lim.Ch.
MACH 120	MACH 110	MACH 135	Lim.Ch.
WRIT 124	MACH 111	MACH 140	Lim.Ch.
Lim.Ch.		Lim.Ch.	

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**INDUSTRIAL TECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE DEGREE**

Curriculum Code: 0110 (Effective Fall 2001–Summer 2006)

Industrial technology is the study of a variety of technologies used in today's industry. Physical and mental skills are required including mechanical skills, problem-solving abilities, and dexterity. Employment opportunities are with industries that have a variety of work processes and/or trades.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Technology Careers Department, Gannon Vocational-Technical Center, Room 1380, telephone number (517) 483-1336.

REQUIREMENTS

TOTAL: 51 CREDITS

CODE	TITLE	CREDIT HOURS
CADD 110	Industrial Blueprint Reading	3
CNCP 110	Foundations of CNC Programming	4
EMTA 100	Medical First Responder	4
HVAC 110	Applied Electricity I	2
MACH 100	Manufacturing Processes	4
MACH 105	Machine Tool Survey	3
MACH 120	Effect Use Machinery Handbook	4
MACH 135	Metallurgy and Heat Treat	4
MATH 114	Technical Math I	4
MATH 115	Technical Math II	4
MFGM 101	Industrial Hydraulics	4
PHYS 200	Applied Physics	4
WELD 100	Combination Welding	4
WRIT 124	Technical Writing	3

LIMITED CHOICE REQUIREMENTS

TOTAL: 12-13 CREDITS

Complete the indicated number of credits from each CHOICE listed below.

CHOICE 1: General Education Core Areas 9 Credits

(See the GENERAL EDUCATION section above)

Writing Core Area (See Note 1)	0
Speech Communication Core Area	3
Science/Technology Core Area	3
Global Perspectives and Diversity Core Area	3
Mathematics Competency (See Note 1)	3

CHOICE 2: Technical Related 3-4 Credits

CNCP 101	PC Applications for Technology	3
MACH 140	Tooling Theory and Practices	4
MACH 210	Prin Electric Discharge Mach	4
QUAL 121	Intro Statistical Process Cont	3

MINIMUM TOTAL 63

NOTE:

- Students completing *REQUIREMENTS* have fulfilled the requirements for this Core area.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
HVAC 110	CADD 110	MACH 135	CNCP 110
MACH 100	MACH 105	MFGM 101	EMTA 100
MATH 114	MACH 120	PHYS 200	Lim.Ch.
WELD 100	MATH 115	Lim.Ch.	Lim.Ch.
	WRIT 124	Lim.Ch.	

**INDUSTRIAL TECHNOLOGY
CERTIFICATE OF ACHIEVEMENT**

Curriculum Code: 0150 (Effective Fall 2001–Summer 2006)

This certificate provides students with a basic understanding of a variety of technologies to enhance the theory skills they already possess.

REQUIREMENTS

TOTAL: 23 CREDITS

CODE	TITLE	CREDIT HOURS
CADD 110	Industrial Blueprint Reading	3
EMTA 100	Medical First Responder	4
MACH 100	Manufacturing Processes	4
MACH 120	Effect Use Machinery Handbook	4
MACH 135	Metallurgy and Heat Treat	4
MATH 114	Technical Math I	4

LIMITED CHOICE REQUIREMENTS

TOTAL: 12 CREDITS

Complete the indicated number of credits from each CHOICE listed below.

CHOICE 1: Related Technology 12 Credits

CNCP 101	PC Applications for Technology	3
MACH 105	Machine Tool Survey	3
MFGM 101	Industrial Hydraulics	4
MFGM 110	Machine Maintenance I	4
PHYS 200	Applied Physics	4
WRIT 124	Technical Writing	3

MINIMUM TOTAL 35

SUGGESTED COURSE SEQUENCE

I	II
CADD 110	EMTA 100
MACH 100	MACH 120
MATH 114	MACH 135
Lim.Ch.	Lim.Ch.
Lim.Ch.	Lim.Ch.

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**MACHINE MAINTENANCE
ASSOCIATE IN APPLIED SCIENCE DEGREE**
Curriculum Code: 0173 (Effective Fall 2001–Summer 2006)

Machine maintenance technicians are involved with the repair, maintenance, and installation of industrial equipment. They repair the machinery of industry, solving mechanical problems. The skills necessary for this type of work are many and varied: critical thinking, problem solving, mechanics, math and physics are but a few. Maintenance technicians also need to know how to diagnose hydraulic problems, perform preventive maintenance procedures, and be able to work well with others. Every industrial plant will have one or more machine maintenance technicians. They may have different titles, but the work is the same.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Technology Careers Department, Gannon Vocational-Technical Center, Room 1380, telephone number (517) 483-1336.

REQUIREMENTS
TOTAL: 47 CREDITS

CODE	TITLE	CREDIT HOURS
CADD 110	Industrial Blueprint Reading	3
EMTA 100	Medical First Responder	4
MACH 105	Machine Tool Survey	3
MACH 110	Machine Tool Technology I	4
MACH 111	Machine Tool Technology II	4
MACH 120	Effect Use Machinery Handbook	4
MACH 135	Metallurgy and Heat Treat	4
MFGM 101	Industrial Hydraulics	4
MFGM 110	Machine Maintenance I	4
MFGM 111	Machine Maintenance II	4
MFGM 120	Industrial Presses	4
MFGM 125	Rigging	2
WRIT 124	Technical Writing	3

LIMITED CHOICE REQUIREMENTS
TOTAL: 22–24 CREDITS

Complete the indicated number of credits from *each CHOICE* listed below.

CHOICE 1: General Education Core Areas 9 Credits

(See the *GENERAL EDUCATION* section above)

Writing Core Area (See Note 1)	0
Speech Communication Core Area	3
Science/Technology Core Area	3
Global Perspectives and Diversity Core Area	3
Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)	

CHOICE 2: Electrical Technology 2–3 Credits

ELTE 110	Practical Electricity	3
HVAC 110	Applied Electricity I	2

CHOICE 3: Technical Related 3–4 Credits

MACH 100	Manufacturing Processes	4
MACH 140	Tooling Theory and Practices	4
MFGM 102	Industrial Pneumatics	3
WELD 100	Combination Welding	4

CHOICE 4: Mathematics & Physics 8 Credits

MATH 114	Technical Math I	4
MATH 115	Technical Math II (See Note 2)	4
PHYS 200	Applied Physics	4

MINIMUM TOTAL 69
NOTE:

- Students completing *REQUIREMENTS* have fulfilled the requirements for this Core area.
- MATH 115 fulfills the Mathematics Core requirement.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
MACH 105	MACH 110	CADD 110	MFGM 111
MFGM 101	MACH 120	EMTA 100	MFGM 120
WRIT 124	MFGM 110	MACH 111	MFGM 125
Lim.Ch.	Lim.Ch.	MACH 135	Lim.Ch.
Lim.Ch.	Lim.Ch.	Lim.Ch.	Lim.Ch.

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**MACHINE REPAIR
CERTIFICATE OF ACHIEVEMENT**

Curriculum Code: 0147 (Effective Fall 2001–Summer 2006)

This program provides technical knowledge and skills in the adjustment, maintenance, part replacement, and repair of tools, equipment and machines. It prepares an individual for an entry-level position.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

INFORMATION

Contact the Technology Careers Department, Gannon Vocational-Technical Center, Room 1380, telephone number (517) 483-1336.

REQUIREMENTS		TOTAL: 32 CREDITS
CODE	TITLE	CREDIT HOURS
CADD 110	Industrial Blueprint Reading	3
EMTA 100	Medical First Responder	4
MACH 105	Machine Tool Survey	3
MATH 114	Technical Math I	4
MFGM 101	Industrial Hydraulics	4
MFGM 110	Machine Maintenance I	4
MFGM 111	Machine Maintenance II	4
MFGM 125	Rigging	2
WELD 100	Combination Welding	4
MINIMUM TOTAL		32

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II
CADD 110	EMTA 100
MACH 105	MFGM 101
MATH 114	MFGM 111
MFGM 110	WELD 100
MFGM 125	

**MILLWRIGHT
CERTIFICATE OF ACHIEVEMENT**

Curriculum Code: 0154 (Effective Fall 2001–Summer 2006)

A millwright installs, maintains and cares for mechanical equipment in a plant, factory or mill. This program prepares an individual for an entry-level position.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

INFORMATION

Contact the Technology Careers Department, Gannon Vocational-Technical Center, Room 1380, telephone number (517) 483-1336.

REQUIREMENTS		TOTAL: 33 CREDITS
CODE	TITLE	CREDIT HOURS
BLDT 103	Structural Blueprint Reading	4
EMTA 100	Medical First Responder	4
MACH 105	Machine Tool Survey	3
MACH 135	Metallurgy and Heat Treat	4
MATH 114	Technical Math I	4
MFGM 101	Industrial Hydraulics	4
MFGM 110	Machine Maintenance I	4
MFGM 111	Machine Maintenance II	4
MFGM 125	Rigging	2

LIMITED CHOICE REQUIREMENTS TOTAL: 3-4 CREDITS
Complete the indicated number of credits from *each* CHOICE listed below.

CHOICE 1:	Building Related	3-4 Credits
BLDT 100	Introduction to Construction	3
BLDT 121	Residential Framing	4
CIVL 120	Surveying	4
MINIMUM TOTAL		36

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III
EMTA 100	BLDT 103	MFGM 111
MACH 105	MACH 135	Lim.Ch.
MATH 114	MFGM 110	
MFGM 101	MFGM 125	

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MACHINIST TOOLMAKER ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 0199 (Effective Fall 2001–Summer 2006)

A machinist toolmaker is involved with the manufacture of machined components relating to various kinds of industry. There are no limits to the variety of projects a machinist toolmaker may be involved with: making prototypes, tools for production, engineering changes on parts, etc. This work involves critical thinking, decision making, math skills, and working cooperatively with others. Machinist toolmakers are capable of operating all the various machine tools in a machine shop. They also must be able to interpret mechanical drawings, calculate mathematical data, and work with others to solve the various problems related to projects going on in the shop at any given time. A machinist toolmaker may be employed in any manufacturing facility.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Technology Careers Department, Gannon Vocational-Technical Center, Room 1380, telephone number (517) 483-1336.

REQUIREMENTS

TOTAL: 52 CREDITS

CODE	TITLE	CREDIT HOURS
CADD 110	Industrial Blueprint Reading	3
CNCP 101	PC Applications for Technology	3
CNCP 110	Foundations of CNC Programming	4
EMTA 100	Medical First Responder	4
MACH 105	Machine Tool Survey	3
MACH 110	Machine Tool Technology I	4
MACH 111	Machine Tool Technology II	4
MACH 112	Machine Tool Technology III	4
MACH 120	Effect Use Machinery Handbook	4
MACH 130	Die Construction	4
MACH 135	Metallurgy and Heat Treat	4
MACH 140	Tooling Theory and Practices	4
MACH 210	Prin Electric Discharge Mach	4
WRIT 124	Technical Writing	3

LIMITED CHOICE REQUIREMENTS

TOTAL: 17 CREDITS

Complete the indicated number of credits from *each* CHOICE listed below.

CHOICE 1: General Education Core Areas 9 Credits

(See the *GENERAL EDUCATION* section above)

Writing Core Area (See Note 1)	0
Speech Communication Core Area	3
Science/Technology Core Area	3
Global Perspectives and Diversity Core Area	3
Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)	

CHOICE 2: Mathematics 8 Credits

MATH 114	Technical Math I	4
MATH 115	Technical Math II (See Note 2)	4
MACH 212	Compound Angles	4

MINIMUM TOTAL 69

NOTE:

- Students completing *REQUIREMENTS* have fulfilled the requirements for this Core area.
- MATH 115 fulfills the Mathematics Core requirement.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
EMTA 100	CADD 110	CNCP 101	CNCP 110
MACH 105	MACH 110	MACH 111	MACH 112
MACH 120	MACH 135	MACH 140	MACH 130
Lim.Ch.	WRIT 124	Lim.Ch.	MACH 210
Lim.Ch.	Lim.Ch.	Lim.Ch.	

TOOL AND DIE MAKER CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 0141 (Effective Fall 2001–Summer 2006)

This program provides technical knowledge and skills to operate machine tools used in the forming of metal components, as well as the fabrication of special tools, dies, jigs, and fixtures used in cutting, working and finishing metal components. It prepares an individual for an entry-level position.

REQUIREMENTS

TOTAL: 38 CREDITS

CODE	TITLE	CREDIT HOURS
CADD 110	Industrial Blueprint Reading	3
EMTA 100	Medical First Responder	4
MACH 105	Machine Tool Survey	3
MACH 110	Machine Tool Technology I	4
MACH 111	Machine Tool Technology II	4
MACH 112	Machine Tool Technology III	4
MACH 120	Effect Use Machinery Handbook	4
MACH 135	Metallurgy and Heat Treat	4
MACH 140	Tooling Theory and Practices	4
MATH 114	Technical Math I	4

MINIMUM TOTAL

38

SUGGESTED COURSE SEQUENCE

I	II	III
CADD 110	EMTA 100	MACH 112
MACH 105	MACH 110	MACH 140
MACH 120	MACH 111	
MATH 114	MACH 135	

**WELDING TECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE DEGREE**

Curriculum Code: 0186 (Effective Fall 2001–Summer 2006)

Welding is many processes of fusion, adhesion and cutting to fabricate or repair products used in manufacturing, research and application. A welding technician could also qualify for welding inspection where welding codes are applied. A welder is a skilled craftsperson with a basic knowledge of metals, applied mathematics, blueprint reading, good eyesight, self-discipline and a respect for safety. A welder also needs to work well with his/her hands and have good manual coordination. Many hours of practice and proper training in the basics of MIG, TIG, shielded metal arc, brazing and oxy-fuel cutting and plasma cutting are necessary. Welders can be found in tool and die industries, auto makers, construction, oil refineries, pipelines and pressure vessels, aircraft industries and many more metal-related industries.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Technology Careers Department, Gannon Vocational-Technical Center, Room 1380, telephone number (517) 483-1336.

REQUIREMENTS

TOTAL: 46 CREDITS

CODE	TITLE	CREDIT HOURS
EMTA 100	Medical First Responder	4
MACH 105	Machine Tool Survey	3
MACH 135	Metallurgy and Heat Treat	4
MFGM 125	Rigging	2
WELD 100	Combination Welding	4
WELD 101	Advanced ARC Welding	4
WELD 110	Gas Metal ARC Welding	4
WELD 111	Gas Tungsten ARC Welding	4
WELD 120	Struct Fabrication/Inspec	4
WELD 125	Struct Blueprint Reading Weld	2
WELD 201	Tool and Die Welding	4
WELD 205	Pipe Welding	4
WRIT 124	Technical Writing	3

LIMITED CHOICE REQUIREMENTS

TOTAL: 15–16 CREDITS

Complete the indicated number of credits from each CHOICE listed below.

CHOICE 1: General Education Core Areas	9 Credits
(See the GENERAL EDUCATION section above)	
Writing Core Area (See Note 1)	0
Speech Communication Core Area	3
Science/Technology Core Area	3
Global Perspectives and Diversity Core Area	3
Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)	
CHOICE 2: Technical Related	6–7 Credits
COOP 210 Cooperative Education (Tech)	3
ELTE 110 Practical Electricity	3
MACH 100 Manufacturing Processes	4
MFGM 102 Industrial Pneumatics	3
MINIMUM TOTAL	61

NOTE:

- Students completing REQUIREMENTS have fulfilled the requirements for this Core area.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
MACH 105	MACH 135	WELD 111	EMTA 100
MFGM 125	WELD 101	WELD 120	WELD 201
WELD 100	WELD 110	WELD 125	WELD 205
Lim.Ch.	WRIT 124	Lim.Ch.	Lim.Ch.
		Lim.Ch.	Lim.Ch.

**WELDING TECHNOLOGY
CERTIFICATE OF ACHIEVEMENT**

Curriculum Code: 0156 (Effective Fall 2001–Summer 2006)

Students receive hands-on instruction in the basics of MIG, TIG, shielded metal arc, brazing and oxy-fuel cutting, and plasma cutting to prepare them for entry level positions.

REQUIREMENTS

TOTAL: 32 CREDITS

CODE	TITLE	CREDIT HOURS
EMTA 100	Medical First Responder	4
MACH 135	Metallurgy and Heat Treat	4
MFGM 125	Rigging	2
WELD 100	Combination Welding	4
WELD 101	Advanced ARC Welding	4
WELD 110	Gas Metal ARC Welding	4
WELD 111	Gas Tungsten ARC Welding	4
WELD 120	Struct Fabrication/Inspec	4
WELD 125	Struct Blueprint Reading Weld	2

MINIMUM TOTAL

32

SUGGESTED COURSE SEQUENCE

I	II	III
EMTA 100	MACH 135	WELD 111
MFGM 125	WELD 101	WELD 120
WELD 100	WELD 110	WELD 125

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**INTERIOR DESIGN TECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE DEGREE**

Curriculum Code: 0257 (Effective Fall 2001--Summer 2006)

Graduates of the Interior Design Technology program work with professional interior designers to plan and create the overall design for interior spaces. They may be employed as estimators, retail sales persons, space planners, computer-aided drafting and design technicians, lighting and color consultants, or kitchen/bath designers. Depending on their specialty, interior design graduates work in retail or wholesale showrooms, design firms, building construction management offices, hospitality chains, interior furnishings manufacturers, or facilities departments. **Not all courses in this program transfer to all colleges.** Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Technology Careers Department, Gannon Vocational-Technical Center, Room 1380, telephone number (517) 483-1336.

REQUIREMENTS TOTAL: 47 CREDITS

CODE	TITLE	CREDIT HOURS
ARCH 101	Architectural Drafting I	4
ARCH 121	Visual Communication I	3
INTR 100	Interior Design Fundamentals	3
INTR 110	Applied Design/Color Theory	3
INTR 151	Computer-Aided Kitchen Design	4
INTR 170	Interior Design Principles	4
INTR 190	Interior/Materials/Equipment	4
INTR 256	Interior Professional Practice	3
INTR 263	Interior Design Internship	1
INTR 265	Interior Design Studio I	8
INTR 270	Interior Design Portfolio	2
INTR 275	Interior Design Studio II	8

LIMITED CHOICE REQUIREMENTS TOTAL: 13 CREDITS

Complete the indicated number of credits from *each CHOICE* listed below.

CHOICE 1: General Education Core Areas 9 Credits

(See the *GENERAL EDUCATION* section above)

Writing Core Area	3
Speech Communication Core Area	3
Science/Technology Core Area	3
Global Perspectives and Diversity Core Area (See Note 1)	0
Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)	

CHOICE 2: Discipline Related History 4 Credits

HUMS 211	History of Art I	4
HUMS 212	History of Art II	4

MINIMUM TOTAL 60

NOTE:

- Students must complete one course from Choice 2 to fulfill the requirements for this Core area.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
ARCH 121	ARCH 101	INTR 256	INTR 263
INTR 100	INTR 151	INTR 265	INTR 270
INTR 110	INTR 190	Lim.Ch.1	INTR 275
INTR 170	Lim.Ch.1	Lim.Ch.1	Lim.Ch.2

STUDENTS ARE RESPONSIBLE FOR COMPLETING ALL REQUIREMENTS AS STATED. THE ONLY OFFICIAL DOCUMENTATION OF PROGRAM COMPLETION STATUS IS AN AUDIT CONDUCTED BY THE REGISTRAR'S OFFICE THAT IS INITIATED WHEN STUDENTS APPLY FOR A DEGREE OR CERTIFICATE. STUDENTS ARE EXPECTED TO APPLY ONE SEMESTER PRIOR TO THE SEMESTER THEY INTEND TO GRADUATE.

**KITCHEN/BATH DESIGN SPECIALIST
CERTIFICATE OF ACHIEVEMENT**

Curriculum Code: 0926 (Effective Fall 2001--Summer 2006)

This certificate of achievement is designed for students who seek education and the acquisition of new skills for occupational advancement or change. This certificate program provides immediate opportunity for employment in the Kitchen and Bath Industry in design and/or sales and may lead to credentialing by the National Kitchen and Bath Association (NKBA). These courses may also apply to the Interior Design Technology, Associate in Applied Science Degree.

REQUIREMENTS TOTAL: 40 CREDITS

CODE	TITLE	CREDIT HOURS
ARCH 100	Intro to Architecture Drafting	3
ARCH 101	Architectural Drafting I	4
ARCH 121	Visual Communication I	3
INTR 100	Interior Design Fundamentals	3
INTR 110	Applied Design/Color Theory	3
INTR 151	Computer-Aided Kitchen Design	4
INTR 170	Interior Design Principles	4
INTR 190	Interior/Materials/Equipment	4
INTR 263	Interior Design Internship	1
INTR 265	Interior Design Studio I	8
MKTG 120	Sales	3

MINIMUM TOTAL 40

SUGGESTED COURSE SEQUENCE

I	II	III
ARCH 100	ARCH 101	INTR 263
INTR 100	ARCH 121	INTR 265
INTR 110	INTR 151	MKTG 120
INTR 170	INTR 190	

**INTERIOR DESIGN MERCHANDISING
CERTIFICATE OF COMPLETION**

Curriculum Code: 0927 (Effective Fall 2001--Summer 2006)

The Interior Design Merchandising Certificate of Completion provides students with knowledge and skills needed for entry-level employment as interior design assistants or for sales positions in merchandising interior design products. Most of these courses may apply to the Interior Design, Kitchen/Bath Specialist, Certificate of Achievement and the Interior Design Technology, Associate in Applied Science Degree.

REQUIREMENTS TOTAL: 23 CREDITS

CODE	TITLE	CREDIT HOURS
ARCH 100	Intro to Architecture Drafting	3
INTR 100	Interior Design Fundamentals	3
INTR 110	Applied Design/Color Theory	3
INTR 170	Interior Design Principles	4
INTR 185	Introduction to Textiles	3
INTR 190	Interior/Materials/Equipment	4
MKTG 120	Sales	3

MINIMUM TOTAL 23

SUGGESTED COURSE SEQUENCE

I	II
ARCH 100	INTR 100
INTR 110	INTR 170
MKTG 120	INTR 185
	INTR 190

**HORTICULTURE
ASSOCIATE IN APPLIED SCIENCE DEGREE**

Curriculum Code: 0189 (Effective Fall 2001–Summer 2006)

A professional horticulturist deals with plant materials, their growth, development, propagation, marketing, and use. The horticulturist works with environmental conditions and pest problems of ornamental plants and their management. The two major specialty areas are landscape horticulture and floriculture. A background in plant maintenance, knowledge of growing environments and structures, as well as retail and marketing skills, is vital. Horticulturists are employed by florists, greenhouses and garden centers, nurseries, retail sales outlets, landscape contractors, design and construction firms, and lawn care companies. **Not all courses in this program transfer to all colleges.** Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Technology Careers Department, Gannon Vocational-Technical Center, Room 1380, telephone number (517) 483-1336.

REQUIREMENTS

TOTAL: 35 CREDITS

CODE	TITLE	CREDIT HOURS
HORT 102	Intro Ornamental Horticulture	3
HORT 105	Pest/Problem Ornamental Plants	2
HORT 230	Plant Propagation/Nursery Op	4
HORT 235	Greenhouse Structures/Environ	3
LAND 100	Intro to Landscape Drafting	2
LAND 130	Interior Landscaping	3
LAND 140	Evergreen and Deciduous Trees	3
LAND 141	Flowering Trees, Shrubs, Vines	3
LAND 142	Perennial/Annual Flower Plants	3
LAND 163	Designing Ornamental Gardens	3
LAND 282	Computer Draft/Design Land Arch	3
WRIT 124	Technical Writing	3

LIMITED CHOICE REQUIREMENTS

TOTAL: 30 CREDITS

Complete the indicated number of credits from *each CHOICE* listed below.

CHOICE 1: General Education Core Areas 9 Credits

(See the *GENERAL EDUCATION* section above)

Writing Core Area (See Note 1)	0
Speech Communication Core Area	3
Science/Technology Core Area	3
Global Perspectives and Diversity Core Area	3
Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)	

CHOICE 2: Specialization (Choose 1 Subchoice) 21 Credits

Subchoice 2A: Floriculture

HORT 103	Indoor Plants and Flowers	2
HORT 107	Beginning Floral Design	2
HORT 109	Contemporary Floral Design	2
HORT 110	Wedding Floral Design	2
HORT 143	Cut Flower, Foliage, Pot Plant	4
HORT 236	Greenhouse Ornamentals	3
HORT 237	Bedding Plant Production	3
HORT 238	Garden Center/Nursery Sales	3

Subchoice 2B: Landscape Horticulture

LAND 150	Principles of Landscape Arch	3
LAND 152	Landscape Graphics Comm-Begin	3
LAND 160	Planting Design I	3
LAND 180	Landscape Ecology	3
LAND 225	Landscape Cost Estimation	3
LAND 232	Professional Res. Land Design	3
LAND 233	Grounds Management	3

MINIMUM TOTAL 65

NOTE:

- Students completing *REQUIREMENTS* have fulfilled the requirements for this Core area.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

Floriculture Option

I	II	III	IV
HORT 102	HORT 103	HORT 110	HORT 230
HORT 107	HORT 105	HORT 237	HORT 238
HORT 143	HORT 109	LAND 130	LAND 163
HORT 235	HORT 236	LAND 142	LAND 282
LAND 100	LAND 141	Lim.Ch.	Lim.Ch.
LAND 140	WRIT 124	Lim.Ch.	

Landscape Horticulture Option

I	II	III	IV
HORT 102	HORT 230	HORT 105	LAND 130
HORT 235	LAND 141	LAND 142	LAND 163
LAND 100	LAND 150	LAND 152	LAND 180
LAND 140	LAND 282	LAND 160	LAND 225
WRIT 124	Lim.Ch.	LAND 232	LAND 233
Lim.Ch.	Lim.Ch.		

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**LANDSCAPE ARCHITECTURE
ASSOCIATE IN APPLIED SCIENCE DEGREE**

Curriculum Code: 0203 (Effective Fall 2001–Summer 2006)

Landscape architects, designers, and planners deal with the ecological design and management of the land. Landscape architects and designers coordinate the analysis, planning, layout, design, and management of the exterior and interior landscape. Landscape architects and designers are employed by design and engineering firms, parks and recreation offices, landscape contractors, design and build firms, nurseries and garden centers, arboreta and botanic gardens, and grounds management firms. A supporting background in computer design graphics and G.I.S. is helpful. **Not all courses in this program transfer to all colleges.** Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Technology Careers Department, Gannon Vocational-Technical Center, Room 1380, telephone number (517) 483-1336.

REQUIREMENTS**TOTAL: 61 CREDITS**

CODE	TITLE	CREDIT HOURS
LAND 100	Intro to Landscape Drafting	2
LAND 140	Evergreen and Deciduous Trees	3
LAND 141	Flowering Trees, Shrubs, Vines	3
LAND 150	Principles of Landscape Arch	3
LAND 152	Landscape Graphics Comm-Begin	3
LAND 153	Landscape Graphics Comm-Adv	3
LAND 160	Planting Design I	3
LAND 161	Planting Design II	3
LAND 164	Site Design	3
LAND 170	Site Grading I	3
LAND 171	Site Grading II	3
LAND 172	Site Layout	3
LAND 225	Landscape Cost Estimation	3
LAND 232	Professional Res. Land Design	3
LAND 233	Grounds Management	3
LAND 250	Landscape Construction Methods	3
LAND 252	Landscape Construction Details	3
LAND 276	Landscape Documents and Spec	2
LAND 282	Computer Draft/Dsgn Land Arch	3
LAND 283	Beginning LANDCADD	3
WRIT 124	Technical Writing	3

LIMITED CHOICE REQUIREMENTS**TOTAL: 9 CREDITS**

Complete the indicated number of credits from *each CHOICE* listed below.

CHOICE 1: General Education Core Areas 9 Credits

(See the *GENERAL EDUCATION* section above)

Writing Core Area (See Note 2)	0
Speech Communication Core Area	3
Science/Technology Core Area	3
Global Perspectives and Diversity Core Area	3
Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)	

MINIMUM TOTAL 70**NOTES:**

1. If students have prior experience in drafting, they should see an academic advisor in the Technology Careers Department to see if LAND 100 can be waived.
2. Students completing *REQUIREMENTS* have fulfilled the requirements for this Core area.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
LAND 100	LAND 141	LAND 161	LAND 171
LAND 140	LAND 153	LAND 170	LAND 172
LAND 150	LAND 160	LAND 232	LAND 225
LAND 152	LAND 164	LAND 250	LAND 233
WRIT 124	LAND 282	LAND 283	LAND 252
Lim.Ch.	Lim.Ch.	Lim.Ch.	LAND 276

**LEGAL ASSISTANT
ASSOCIATE IN BUSINESS DEGREE**

Curriculum Code: 0101 (Effective Fall 2001–Summer 2006)

Legal assistants, also known as paralegals, assist lawyers by performing many of the same tasks, except for those considered to be the practice of law. To help lawyers prepare cases for trial, they may investigate the facts; perform legal research to identify relevant laws, legal articles, judicial decisions and other documents/materials related to the case; and prepare written reports after organizing and analyzing all the information. Other duties may include drafting briefs and pleadings, obtaining affidavits, assisting the lawyer during trial, and organizing and maintaining document and correspondence files. Some legal assistants may help with completing forms, tax returns, and drafting contracts.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Business Careers Department, Old Central Building, Room 210, telephone number (517) 483-1522.

REQUIREMENTS

TOTAL: 39 CREDITS

CODE	TITLE	CREDIT HOURS
CABS 113	Microsoft Word Office/Int Key	4
LEGL 115	Legal Assistant Career/Ethics	3
LEGL 120	Legal Research I	3
LEGL 121	Legal Writing I	3
LEGL 160	Critical Thinking in Law	3
LEGL 210	Litigation Procedures	4
LEGL 211	Tort Law	2
LEGL 215	Busn Law I, Basic Principles	3
LEGL 225	Legal Research and Writing II	3
LEGL 228	Computer Tech for Legal Assist	3
WRIT 121	Composition I	4
WRIT 122	Composition II	4

LIMITED CHOICE REQUIREMENTS

TOTAL: 21 CREDITS

Complete the indicated number of credits from each CHOICE listed below.

CHOICE 1: General Education Core Areas 9 Credits

(See the GENERAL EDUCATION section above)

Writing Core Area (See Note 1)	0
Speech Communication Core Area	3
Science/Technology Core Area	3
Global Perspectives and Diversity Core Area	3
Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)	

CHOICE 2: Business Law 3 Credits

LEGL 216	Busn Law II, Commercial Law	3
LEGL 217	Busn Law III, Busn Organiza	3
LEGL 220	Internat Legal Issues/Organiza	3

CHOICE 3: General Law 9 Credits

LEGL 218	Litigation Specialties	3
LEGL 221	Real Estate Transaction	3
LEGL 222	Probate Law and Procedure	3
LEGL 223	Domestic Relations	3
LEGL 224	Administrative Law	3
LEGL 226	Legal Interview/Investigation	3
LEGL 227	Bankruptcy and Collections	3
LEGL 280	Legal Assistant Internship	3

MINIMUM TOTAL 60

NOTE:

- Students completing REQUIREMENTS have fulfilled the requirements for this Core area.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
CABS 113	LEGL 120	LEGL 121	LEGL 225
LEGL 115	LEGL 211	LEGL 210	LEGL 228
LEGL 160	WRIT 122	Lim.Ch.1	Lim.Ch.3
LEGL 215	Lim.Ch.1	Lim.Ch.2	Lim.Ch.3
WRIT 121	Lim.Ch.1	Lim.Ch.3	

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**LEGAL ASSISTANT POST-BACHELOR
CERTIFICATE OF ACHIEVEMENT****Curriculum Code: 0744 (Effective Fall 2001–Summer 2006)**

The legal assistant career is an excellent choice for students possessing a bachelor's degree, especially students with strong analytical and writing skills. These students may select the following certificate curriculum which requires only legal assistant courses.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

INFORMATION

Contact the Business Careers Department, Old Central Building, Room 210, telephone number (517) 483-1522.

REQUIREMENTS**TOTAL: 21 CREDITS**

CODE	TITLE	CREDIT HOURS
LEGL 115	Legal Assistant Career/Ethics	3
LEGL 120	Legal Research I	3
LEGL 121	Legal Writing I	3
LEGL 210	Litigation Procedures	4
LEGL 211	Tort Law	2
LEGL 215	Busn Law I, Basic Principles	3
LEGL 225	Legal Research and Writing II	3

LIMITED CHOICE REQUIREMENTS**TOTAL: 12 CREDITS**

Complete the indicated number of credits from *each CHOICE* listed below.

CHOICE 1:	Business Law	3 Credits
LEGL 216	Busn Law II, Commercial Law	3
LEGL 217	Busn Law III, Busn Organiza	3
LEGL 220	Internat Legal Issues/Organiza	3

CHOICE 2:	General Law	9 Credits
LEGL 218	Litigation Specialties	3
LEGL 221	Real Estate Transaction	3
LEGL 222	Probate Law and Procedure	3
LEGL 223	Domestic Relations	3
LEGL 224	Administrative Law	3
LEGL 226	Legal Interview/Investigation	3
LEGL 227	Bankruptcy and Collections	3
LEGL 228	Computer Tech for Legal Assist	3
LEGL 280	Legal Assistant Internship	3

MINIMUM TOTAL 33**NOTES:**

- Students in this curriculum will be granted a prerequisite override to take these courses concurrently with LEGL 115. Contact the Business Careers Department, telephone number (517) 483-1522 prior to registration.
- Students following this curriculum must have proof of a bachelor's degree entered on their official Lansing Community College transcript before a certificate of achievement may be granted. Students who do not possess a bachelor's degree should follow the Legal Assistant, Associate in Business Degree curriculum #10101.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II
LEGL 115	LEGL 211
LEGL 120	LEGL 225
LEGL 121	Lim.Ch.
LEGL 210	Lim.Ch.
LEGL 215	Lim.Ch.
	Lim.Ch.

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**ADVANCED MANAGEMENT
CERTIFICATE OF ACHIEVEMENT**

Curriculum Code: 0280 (Effective Fall 2001–Summer 2006)

This is an advanced certificate program that may be taken after obtaining an associate or bachelors degree in order to enhance an individual's employment and advancement opportunities. Courses in this certificate may be used as the third year in the Northwood University Bachelor of Business Administration degree. **Not all courses in this program transfer to all colleges.** Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

INFORMATION

Contact the Business Careers Department, Old Central Building, Room 210, telephone number (517) 483-1522 or the Advanced Management Coordinator at (517) 483-1544.

REQUIREMENTS

TOTAL: 21 CREDITS

CODE	TITLE	CREDIT HOURS
MGMT 304	Organizational Development	3
MGMT 329	Adv Mgmt Communication Skills	3
MGMT 332	Managerial Ethics	3
MGMT 335	Managerial Statistics	3
MGMT 337	Human Resource Mgmt Skills	3
MGMT 338	Current Topics in Management	3
MGMT 348	Strategic Management/Policy (See Note 1)	3

LIMITED CHOICE REQUIREMENTS

TOTAL: 9-10 CREDITS

Complete the indicated number of credits from *each* CHOICE listed below.

CHOICE 1: Management	3 Credits
MGMT 223 Supervision	3
MGMT 225 Principles of Management	3
MGMT 300 Managerial Leadership	3
CHOICE 2: Finance	3 Credits
ACCG 271 Principles of Finance	3
MGMT 346 Managerial Finance	3
CHOICE 3: Business Related (See Note 2)	3-4 Credits
ACCG 210 Principles of Accounting I	4
ACCG 211 Principles of Accounting II	4
BUSN 118 Introduction to Business	3
BUSN 201 International Business	3
CISB 100 Intro Computer Info Systems	3
ECON 201 Principles of Economics-Micro	3
ECON 202 Principles of Economics-Macro	3
LEGL 215 Busn Law I, Basic Principles	3
MKTG 200 Principles of Marketing	3
MKTG 235 Marketing Internship	3
WRIT 127 Business Writing	3
MINIMUM TOTAL	30

NOTES:

1. It is recommended that MGMT 348 be taken near the end of this Certificate program.
2. Students may also choose a maximum of 2 credits total from the T.I.M.E. Series (course codes MGMT 240–MGMT 279) and/or a maximum of 2 credits from CABS-prefix courses of 110 or above.
3. Students should confer with a Business Careers program advisor to assure that selection of Limited Choice courses will best fit their career plans.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II
MGMT 304	MGMT 332
MGMT 329	MGMT 337
MGMT 335	MGMT 348
MGMT 338	Lim.Ch.
Lim.Ch.	Lim.Ch.

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**HUMAN RESOURCE MANAGEMENT
ASSOCIATE IN BUSINESS DEGREE**

Curriculum Code: 0712 (Effective Fall 2001-Summer 2006)

Human resource managers serve as a link between management and employees. They help management make effective use of employees' skills, and help employees find satisfaction in their jobs and working conditions. Graduates of this program are involved with recording and evaluating information, such as job experience, education, skills, qualifications, and job performance; providing information about policies, job duties, working conditions, wages, opportunities for promotion, and employee benefits; maintaining job files on employees; administering various employee benefits; collecting and analyzing labor market data; and employee selection and training. **Not all courses in this program transfer to all colleges.** Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Business Careers Department, Old Central Building, room 210, telephone number (517) 483-1522.

REQUIREMENTS TOTAL: 45 CREDITS

CODE	TITLE	CREDIT HOURS
BUSN 118	Introduction to Business	3
CISB 200	Info Sys Tech/Problem Solving	3
LABR 204	Employment Law for Managers	3
MGMT 200	Creative Thinking for Business	3
MGMT 223	Supervision	3
MGMT 224	Human Resource Management	3
MGMT 225	Principles of Management	3
MGMT 227	Training/Development for Busn	3
MGMT 228	Organizational Behavior	3
MGMT 229	Compensation Management	3
MGMT 231	Team Development	3
MGMT 234	Diversity in the Workplace	3
MGMT 237	Managing/Continual Improvement	3
SPCH 110	Oral Communic in the Workplace	3
WRIT 127	Business Writing	3

LIMITED CHOICE REQUIREMENTS TOTAL: 15-19 CREDITS

Complete the indicated number of credits from each CHOICE listed below.

CHOICE 1: General Education Core Areas 0 Credits

- (See the GENERAL EDUCATION section above)
- Writing Core Area (See Note 1) 0
- Speech Communication Core Area (See Note 1) 0
- Science/Technology Core Area (See Note 1) 0
- Global Perspectives and Diversity Core Area (See Note 1) 0
- Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)

CHOICE 2: Specialty Related (See Note 2) 9-11 Credits

LABR 200	Intro to Labor Relations	3
LABR 201	Labor Negotiation/Contract Adm	3
LABR 203	Labor Law	3
LEGL 215	Busn Law I, Basic Principles	3
MGMT 101	Management Special Topics (See Note 3)	1
MGMT 150	Managing Customer Relations	3
MGMT 239	Time Management	3
MGMT 280	Management Internship	3
MGMT 235	Independent Study/Management	1-3
MGMT 300	Managerial Leadership	3
MGMT 304	Organizational Development	3
MGMT 329	Adv Mgmt Communication Skills	3
MGMT 337	Human Resource Mgmt Skills	3
MKTG 100	Current Issues in Business	3
MKTG 119	Mktg/Manage Your Profess Image	3
MKTG 229	Public Relations	2

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CHOICE 3: Computer Related (See Note 4) 3-4 Credits

CHOICE 4: Quantitative Related 3-4 Credits

ACCG 101	Accounting Info for Management	3
ACCG 210	Principles of Accounting I	4
MATH 117	Math for Business	4
MGMT 335	Managerial Statistics	3
MGMT 346	Managerial Finance	3

MINIMUM TOTAL 60

NOTES:

1. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.
2. Students may also choose a maximum of 2 credits total from the T.I.M.E. Series (course codes MGMT 240 through MGMT 279).
3. MGMT 101 maybe taken up to three times for a maximum of 3 credits toward this degree.
4. Choose CABS-prefix courses of 110 or above and/or CISB-prefix courses above 100.
5. Students should confer with a Business Careers program advisor to assure that selection of Limited Choice courses will best fit their career plans.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
BUSN 118	MGMT 224	LABR 204	MGMT 227
CISB 200	MGMT 228	MGMT 200	MGMT 229
MGMT 223	SPCH 110	MGMT 225	MGMT 237
MGMT 234	WRIT 127	MGMT 231	Lim.Ch.
Lim.Ch.	Lim.Ch.	Lim.Ch.	Lim.Ch.
	Lim.Ch.		

**LABOR RELATIONS
CERTIFICATE OF COMPLETION**

Curriculum Code: 0256 (Effective Fall 2001-Summer 2006)

Certificate holders may improve their opportunities for advancement in this or a related area. Additional education enhances the individual's employment opportunities.

REQUIREMENTS TOTAL: 12 CREDITS

CODE	TITLE	CREDIT HOURS
LABR 200	Intro to Labor Relations	3
LABR 201	Labor Negotiation/Contract Adm	3
LABR 203	Labor Law	3
LABR 204	Employment Law for Managers	3

MINIMUM TOTAL 12

SUGGESTED COURSE SEQUENCE

I	II
LABR 200	LABR 201
LABR 204	LABR 203

**MANAGEMENT
ASSOCIATE IN BUSINESS DEGREE**

Curriculum Code: 0245 (Effective Fall 2001–Summer 2006)

A manager plans, organizes, delegates, and controls entire projects from start to finish. The role cuts across all areas of business and organizational life and has as its central purpose the increase of resources: personnel, money, machines, and materials. Managers supply the encouragement, coordination, and leadership to achieve company goals. Graduates of this program may qualify for entry-level positions. Addition of a technical or business specialty increases one's employability. **Not all courses in this program transfer to all colleges.** Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Business Careers Department, Old Central Building, Room 210, telephone number (517) 483-1522.

REQUIREMENTS

TOTAL: 48 CREDITS

CODE	TITLE	CREDIT HOURS
BUSN 118	Introduction to Business	3
BUSN 201	International Business	3
CISB 200	Info Sys Tech/Problem Solving	3
LABR 200	Intro to Labor Relations	3
LABR 204	Employment Law for Managers	3
MGMT 200	Creative Thinking for Business	3
MGMT 223	Supervision	3
MGMT 224	Human Resource Management	3
MGMT 225	Principles of Management	3
MGMT 228	Organizational Behavior	3
MGMT 231	Team Development	3
MGMT 234	Diversity in the Workplace	3
MGMT 237	Managing/Continual Improvement	3
MKTG 200	Principles of Marketing	3
SPCH 110	Oral Communic in the Workplace	3
WRIT 127	Business Writing	3

LIMITED CHOICE REQUIREMENTS

TOTAL: 12–15 CREDITS

Complete the indicated number of credits from *each CHOICE* listed below.

CHOICE 1: General Education Core Areas 0 Credits

- (See the *GENERAL EDUCATION* section above)
- Writing Core Area (See Note 1) 0
 - Speech Communication Core Area (See Note 1) 0
 - Science/Technology Core Area (See Note 1) 0
 - Global Perspectives and Diversity Core Area (See Note 1) 0
 - Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)

CHOICE 2: Accounting 3–4 Credits

- ACCG 101 Accounting Info for Management 3
- ACCG 210 Principles of Accounting I 4
- MATH 117 Math for Business 4
- MGMT 346 Managerial Finance 3

CHOICE 3: Management Related (See Note 2)	9–11 Credits
ACCG 211 Principles of Accounting II	4
BUSN 295 Small Business Management	3
ECON 201 Principles of Economics-Micro	3
ECON 202 Principles of Economics-Macro	3
LEGL 215 Busn Law I, Basic Principles	3
MGMT 101 Management Special Topics (See Note 4)	1
MGMT 150 Managing Customer Relations	3
MGMT 227 Training/Development for Busn	3
MGMT 235 Independent Study/Management	1–3
MGMT 239 Time Management	3
MGMT 280 Management Internship	3
MGMT 300 Managerial Leadership	3
MKTG 119 Mktg/Manage Your Profess Image	3
MKTG 202 Managerial Marketing	3
MKTG 229 Public Relations	2

MINIMUM TOTAL

60

NOTES:

1. Students completing *REQUIREMENTS* have fulfilled the requirements for this Core area.
2. Students may also choose a maximum of 2 credits total from the T.I.M.E. Series (course codes MGMT 240 through MGMT 279) and/or a maximum of 2 credits of CABS-prefix courses of 110 or above.
3. Students should confer with a Business Careers program advisor to assure that selection of Limited Choice courses will best fit their career plans.
4. MGMT 101 may be taken up to three times for a maximum of 3 credits toward this degree.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
BUSN 118	BUSN 201	MGMT 225	LABR 204
CISB 200	MGMT 223	MGMT 228	MGMT 200
LABR 200	MGMT 224	MKTG 200	MGMT 237
MGMT 234	MGMT 231	SPCH 110	Lim.Ch.
Lim.Ch.	WRIT 127	Lim.Ch.	Lim.Ch.

STUDENTS ARE RESPONSIBLE FOR COMPLETING ALL REQUIREMENTS AS STATED. THE ONLY OFFICIAL DOCUMENTATION OF PROGRAM COMPLETION STATUS IS AN AUDIT CONDUCTED BY THE REGISTRAR'S OFFICE THAT IS INITIATED WHEN STUDENTS APPLY FOR A DEGREE OR CERTIFICATE. STUDENTS ARE EXPECTED TO APPLY ONE SEMESTER PRIOR TO THE SEMESTER THEY INTEND TO GRADUATE.

**MANAGEMENT
CERTIFICATE OF ACHIEVEMENT**

Curriculum Code: 0249 (Effective Fall 2001–Summer 2006)

Certificate holders may improve their opportunities for advancement in this or a related area. The Certificate of Achievement is often useful in conjunction with another degree in professions such as health careers or computers. Additional education enhances an individual's employment opportunities. Courses in this certificate may also be applied directly toward an Associate Degree in Management.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

INFORMATION

Contact the Business Careers Department, Old Central Building, Room 210, telephone number (517) 483-1522.

REQUIREMENTS

TOTAL: 24 CREDITS

CODE	TITLE	CREDIT HOURS
BUSN 118	Introduction to Business	3
CISB 200	Info Sys Tech/Problem Solving	3
LABR 204	Employment Law for Managers	3
MGMT 224	Human Resource Management	3
MGMT 225	Principles of Management	3
MGMT 228	Organizational Behavior	3
MGMT 231	Team Development	3
MGMT 234	Diversity in the Workplace	3

LIMITED CHOICE REQUIREMENTS

TOTAL: 6-7 CREDITS

Complete the indicated number of credits from *each CHOICE* listed below.

CHOICE 1: Accounting	3-4 Credits
ACCG 101 Accounting Info for Management	3
ACCG 210 Principles of Accounting I	4
MATH 117 Math for Business	4
CHOICE 2: Communication Skills	3 Credits
SPCH 110 Oral Communic in the Workplace	3
WRIT 127 Business Writing	3
MINIMUM TOTAL	30

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

i	ii
BUSN 118	LABR 204
CISB 200	MGMT 228
MGMT 224	MGMT 231
MGMT 225	MGMT 234
Lim.Ch.	Lim.Ch.

**SMALL BUSINESS MANAGEMENT
CERTIFICATE OF COMPLETION**

Curriculum Code: 0903 (Effective Fall 2001–Summer 2006)

This program consists of practical hands-on courses that provide students with the basic business knowledge and skills necessary to start a small business.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

INFORMATION

Contact the Business Careers Department, Old Central Building, Room 210, telephone number (517) 483-1522.

REQUIREMENTS

TOTAL: 7 CREDITS

CODE	TITLE	CREDIT HOURS
BUSN 191	Independent Study/Business (See Note 1)	1
BUSN 295	Small Business Management	3
MKTG 200	Principles of Marketing	3

LIMITED CHOICE REQUIREMENTS

TOTAL: 8-10 CREDITS

Complete the indicated number of credits from *each CHOICE* listed below.

CHOICE 1: Accounting	3 Credits
ACCG 100 Practical Accounting Non-Major	3
ACCG 101 Accounting Info for Management	3
CHOICE 2: Management Related (See Note 2)	3-4 Credits
MGMT 223 Supervision	3
MGMT 244 Supervisory Management	2
MGMT 254 How to Write a Business Plan	2
CHOICE 3: Computer Related	2-3 Credits
CABS 110 Microsoft Office	3
CABS 126 Excel	2
CISB 102 Internet Literacy	3
MKTG 210 Marketing on the Internet	3
MINIMUM TOTAL	15

NOTES:

1. It is recommended that BUSN 191 be taken during the last semester of this certificate program. This capstone experience will result in a completed business plan.
2. Students may also choose up to 4 credits from the T.I.M.E. Series (MGMT 240 through MGMT 279) to fulfill this requirement.

SUGGESTED COURSE SEQUENCE

Students should contact the Small Business Management Program Advisor as soon as possible to plan this program. Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact the advisor for help with adjustments.

i	ii
BUSN 295	BUSN 191
Lim.Ch.1	MKTG 200
Lim.Ch.2	Lim.Ch.2
	Lim.Ch.3

STUDENTS ARE RESPONSIBLE FOR COMPLETING ALL REQUIREMENTS AS STATED. THE ONLY OFFICIAL DOCUMENTATION OF PROGRAM COMPLETION STATUS IS AN AUDIT CONDUCTED BY THE REGISTRAR'S OFFICE THAT IS INITIATED WHEN STUDENTS APPLY FOR A DEGREE OR CERTIFICATE. STUDENTS ARE EXPECTED TO APPLY ONE SEMESTER PRIOR TO THE SEMESTER THEY INTEND TO GRADUATE.

**FIELD SALES AND MARKETING
ASSOCIATE IN BUSINESS DEGREE**

Curriculum Code: 0190 (Effective Fall 2001–Summer 2006)

Sales/marketing specialists, or sales representatives, sell products to wholesalers, retailers, or consumers, usually on a commission basis. They call on customers, demonstrate products, point out salable features, answer questions, and forward orders. Some sales representatives sell services, rather than products. Graduates of this program are prepared to work in a variety of manufacturing, wholesaling, and retailing environments, as well as in the service sector of our economy. **Not all courses in this program transfer to all colleges.** Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Business Careers Department, Old Central Building, Room 210, telephone number (517) 483-1522.

REQUIREMENTS

TOTAL: 41 CREDITS

CODE	TITLE	CREDIT HOURS
BUSN 118	Introduction to Business	3
CISB 200	Info Sys Tech/Problem Solving	3
LEGL 215	Busn Law I, Basic Principles	3
MGMT 200	Creative Thinking for Business	3
MGMT 234	Diversity in the Workplace	3
MKTG 100	Current Issues in Business	3
MKTG 119	Mktg/Manage Your Profess Image	3
MKTG 120	Sales	3
MKTG 122	Field Sales Internship	3
MKTG 200	Principles of Marketing	3
MKTG 202	Managerial Marketing	3
MKTG 221	Consumer Behavior	2
SPCH 110	Oral Communic in the Workplace	3
WRIT 127	Business Writing	3

LIMITED CHOICE REQUIREMENTS

TOTAL: 19 CREDITS

Complete the indicated number of credits from *each CHOICE* listed below.

CHOICE 1: General Education Core Areas 0 Credits

(See the *GENERAL EDUCATION* section above)

Writing Core Area (See Note 1)	0
Speech Communication Core Area (See Note 1)	0
Science/Technology Core Area (See Note 1)	0
Global Perspectives and Diversity Core Area (See Note 1)	0
Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)	0

CHOICE 2: Sales/Marketing Related (See Note 2) 19 Credits

ACCG 210	Principles of Accounting I	4
ACCG 211	Principles of Accounting II	4
BUSN 201	International Business	3
BUSN 295	Small Business Management	3
CABS 110	Microsoft Office	3
ECON 201	Principles of Economics-Micro	3
ECON 202	Principles of Economics-Macro	3
MGMT 150	Managing Customer Relations	3
MGMT 225	Principles of Management	3
MGMT 228	Organizational Behavior	3
MGMT 239	Time Management	3
MKTG 101	Marketing Special Topics (See Note 3)	1
MKTG 131	Merchandising	2
MKTG 140	Introduction to Advertising	3
MKTG 204	Marketing Research	3
MKTG 210	Marketing on the Internet	3
MKTG 229	Public Relations	2
MKTG 235	Marketing Internship	3

MINIMUM TOTAL

60

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NOTES:

1. Students completing *REQUIREMENTS* have fulfilled the requirements for this Core area.
2. Students may also choose up to 4 credits of T.I.M.E. Series courses (MGMT 240 through MGMT 279). Students should confer with a Business Careers program advisor to assure that selection of Limited Choice courses will best fit their career plans.
3. MKTG 101 may be taken up to three times for a maximum of 3 credits toward this degree.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
BUSN 118	MGMT 200	CISB 200	MKTG 122
MKTG 100	MGMT 234	LEGL 215	MKTG 202
SPCH 110	MKTG 119	MKTG 120	Lim.Ch.
WRIT 127	MKTG 200	MKTG 221	Lim.Ch.
Lim.Ch.	Lim.Ch.	Lim.Ch.	Lim.Ch.

**FIELD SALES AND MARKETING
CERTIFICATE OF ACHIEVEMENT**

Curriculum Code: 0242 (Effective Fall 2001–Summer 2006)

Certificate holders may improve their opportunities for advancement in this or a related area. Additional education enhances an individual's employment opportunities.

REQUIREMENTS

TOTAL: 24 CREDITS

CODE	TITLE	CREDIT HOURS
BUSN 118	Introduction to Business	3
CABS 110	Microsoft Office	3
MKTG 119	Mktg/Manage Your Profess Image	3
MKTG 120	Sales	3
MKTG 122	Field Sales Internship	3
MKTG 200	Principles of Marketing	3
SPCH 110	Oral Communic in the Workplace	3
WRIT 127	Business Writing	3

LIMITED CHOICE REQUIREMENTS

TOTAL: 6 CREDITS

Complete the indicated number of credits from *each CHOICE* listed below.

CHOICE 1: Marketing Related (See Note 1) 6 Credits

MINIMUM TOTAL 30

NOTE:

1. Choose any course with a MKTG prefix not already used to meet certificate requirements.

SUGGESTED COURSE SEQUENCE

I	II
BUSN 118	CABS 110
MKTG 119	MKTG 122
MKTG 120	MKTG 200
WRIT 127	SPCH 110
Lim.Ch.	Lim.Ch.

**MARKETING
ASSOCIATE IN BUSINESS DEGREE**

Curriculum Code: 0204 (Effective Fall 2001-Summer 2006)

Marketing is the set of activities that aims to satisfy the customer while making a profit. It is concerned with determining need and meeting demand by making goods and services known, available, and affordable. Entry-level personnel may require time in sales before internal promotion into marketing management positions. Graduates of this program are prepared to work in nearly every type of business and organization today. Traditional product marketing management is giving way to areas like nonprofit organization marketing, leading to a diverse job opportunity picture. **Not all courses in this program transfer to all colleges.** Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Business Careers Department, Old Central Building, Room 210, telephone number (517) 483-1522.

REQUIREMENTS

TOTAL: 46 CREDITS

CODE	TITLE	CREDIT HOURS
BUSN 118	Introduction to Business	3
CABS 110	Microsoft Office	3
CISB 200	Info Sys Tech/Problem Solving	3
MGMT 234	Diversity in the Workplace	3
MKTG 100	Current Issues in Business	3
MKTG 119	Mktg/Manage Your Profess Image	3
MKTG 120	Sales	3
MKTG 130	Retailing	3
MKTG 140	Introduction to Advertising	3
MKTG 200	Principles of Marketing	3
MKTG 202	Managerial Marketing	3
MKTG 204	Marketing Research	3
MKTG 221	Consumer Behavior	2
MKTG 229	Public Relations	2
SPCH 110	Oral Communic in the Workplace	3
WRIT 127	Business Writing	3

LIMITED CHOICE REQUIREMENTS

TOTAL: 14 CREDITS

Complete the indicated number of credits from each CHOICE listed below.

CHOICE 1: General Education Core Areas 0 Credits

(See the GENERAL EDUCATION section above)

Writing Core Area (See Note 1)	0
Speech Communication Core Area (See Note 1)	0
Science/Technology Core Area (See Note 1)	0
Global Perspectives and Diversity Core Area (See Note 1)	0
Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)	

CHOICE 2: Field Experience 3 Credits

MKTG 122	Field Sales Internship	3
MKTG 235	Marketing Internship	3

CHOICE 3: Marketing Related (See Note 2) 11 Credits

ACCG 210	Principles of Accounting I	4
BUSN 201	International Business	3
BUSN 254	Introduction to Investments	2
BUSN 295	Small Business Management	3
ECON 201	Principles of Economics-Micro	3
ECON 202	Principles of Economics-Macro	3
LEGL 215	Busn Law I, Basic Principles	3

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MGMT 150	Managing Customer Relations	3
MGMT 200	Creative Thinking for Business	3
MGMT 223	Supervision	3
MGMT 231	Team Development	3
MKTG 101	Marketing Special Topics (See Note 3)	1
MKTG 131	Merchandising	2
MKTG 210	Marketing on the Internet	3
MKTG 231	Independent Study in Marketing	1-3

MINIMUM TOTAL

60

NOTES:

- Students completing REQUIREMENTS have fulfilled the requirements for this Core area.
- Students may also choose up to 4 credits of T.I.M.E. Series courses (MGMT 240 through MGMT 279). Students should confer with a Business Careers program advisor to assure that selection of Limited Choice courses will best fit their career plans.
- MKTG 101 may be taken up to three times for maximum of 3 credits toward this degree.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
BUSN 118	MGMT 234	BUSN 229	CISB 200
CABS 110	MKTG 119	MKTG 120	MKTG 130
MKTG 100	MKTG 200	MKTG 140	MKTG 202
WRIT 127	SPCH 110	MKTG 204	Lim.Ch.
Lim.Ch.	Lim.Ch.	MKTG 221	Lim.Ch.
		Lim.Ch.	

**MARKETING
CERTIFICATE OF ACHIEVEMENT**

Curriculum Code: 0225 (Effective Fall 2001-Summer 2006)

Certificate holders may improve their opportunities for advancement in this or a related area. Additional education enhances an individual's employment opportunities.

REQUIREMENTS

TOTAL: 24 CREDITS

CODE	TITLE	CREDIT HOURS
BUSN 118	Introduction to Business	3
MKTG 119	Mktg/Manage Your Profess Image	3
MKTG 120	Sales	3
MKTG 130	Retailing	3
MKTG 200	Principles of Marketing	3
MKTG 202	Managerial Marketing	3
SPCH 110	Oral Communic in the Workplace	3
WRIT 127	Business Writing	3

LIMITED CHOICE REQUIREMENTS

TOTAL: 6 CREDITS

Complete the indicated number of credits from each CHOICE listed below.

CHOICE 1: Marketing Related (See Note 1) 6 Credits

MINIMUM TOTAL

30

NOTE:

- Choose any course with a MKTG prefix not already used to meet certificate requirements.

SUGGESTED COURSE SEQUENCE

I	II
BUSN 118	MKTG 120
MKTG 119	MKTG 130
MKTG 200	MKTG 202
WRIT 127	SPCH 110
Lim.Ch.	Lim.Ch.

**MEDIA TECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE DEGREE**

Curriculum Code: 0184 (Effective Fall 2001–Summer 2006)

Media Technology is an integrated program that prepares students for professional careers in audio, radio and television/video. Audio professionals work in audio production, audio post-production for video and sound reinforcement positions, as well as in a variety of audio-related jobs. Radio professionals work in radio production, programming, promotion, on-air/news/sports announcing, and station operations. Television/video professionals work in producing, directing, technical operations, videography, and videotape editing in broadcast and non-broadcast settings. **Not all courses in this program transfer to all colleges.** Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Media Technology Program, Technology Learning Center, Room 123, telephone number (517) 483-1677.

REQUIREMENTS

TOTAL: 37 CREDITS

CODE	TITLE	CREDIT HOURS
CISB 100	Intro Computer Info Systems (See Note 1)	3
MTEC 110	Intro Broadcast/Elec Media	4
MTEC 120	Audio Production I	4
MTEC 130	Radio Production I	4
MTEC 150	TV Production I	4
MTEC 240	Script/Copywriting for Media	3
MTEC 243	Ethics/Social Impact of Media	3
MTEC 285	Media Portfolio (See Note 2)	2
MTEC 296	Media Internship (See Note 3)	3
SPCH 120	Dynamics of Communication	3
WRIT 121	Composition I	4

LIMITED CHOICE REQUIREMENTS

TOTAL: 32-36 CREDITS

Complete the indicated number of credits from each CHOICE listed below.

CHOICE 1: General Education Core Areas 6 Credits

(See the GENERAL EDUCATION section above)

Writing Core Area (See Note 4)	0
Speech Communication Core Area (See Note 4)	0
Science/Technology Core Area	3
Global Perspectives and Diversity Core Area	3
Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)	

CHOICE 2: Media Specialty (Choose one subchoice) 22-26 Credits

Subchoice 2A: Audio/Radio

MTEC 121	Audio Recording I	4
MTEC 122	Sound Reinforcement	4
MTEC 220	Audio Production II	4
MTEC 221	Audio Recording II	4
MTEC 223	Sound Reinforcement Practicum	2
MTEC 230	Radio Production II	4
MTEC 232	Radio Workshop (See Note 5)	2

Subchoice 2B: Video/Television

MTEC 152	Video Production Techniques	3
MTEC 153	Video Post-Production Technqns	3
MTEC 250	TV Production II	4
MTEC 251	Advanced Field Production	4
MTEC 252	Lighting for Television/Video	3
MTEC 254	Electronic Presentat Graphics	3
MTEC 255	Video Workshop (See Note 6)	2

Subchoice 2C: General Media Occupations (See Note 7)

CHOICE 3: Media-Related (See Note 8) 4 Credits

MINIMUM TOTAL 69

NOTES:

- Students having demonstrated computer proficiency should consult their program advisor for alternatives to CISB 100.
- The Portfolio is a capstone course in this curriculum. All courses must be completed or taken concurrently with MTEC 285.
- Enrollment in MTEC 296 will be limited to Media Technology majors who have successfully completed 75% of their MTEC course work.
- Students completing REQUIREMENTS have fulfilled the requirements for this Core area.
- MTEC 232 must be taken two times for a total of 4 credits. A Media Technology major may not apply more than four credits in MTEC 232 toward this degree.
- A Media Technology major may not apply more than four credits in MTEC 255 toward this degree.
- Credits must be taken from Subchoices 2A, 2B, and/or departmentally approved MTEC electives or other departmentally approved electives. Students following Subchoice 2C must consult with a Media Technology Program Advisor regarding course selection.
- Students must select courses with the approval of a Media Program advisor. This Choice allows students to select from additional Media courses (MTEC prefix) or from other courses that will augment their Media training.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
MTEC 110	CISB 100	MTEC 240	MTEC 285
MTEC 120	WRIT 121	MTEC 243	MTEC 296
MTEC 130	Lim.Ch.	Lim.Ch.	SPCH 120
MTEC 150	Lim.Ch.	Lim.Ch.	Lim.Ch.
Lim.Ch.	Lim.Ch.	Lim.Ch.	Lim.Ch.

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**MEDIA TECHNOLOGY
CERTIFICATE OF ACHIEVEMENT**

Curriculum Code: 0967 (Effective Fall 2001–Summer 2006)

This program consists of practical, hands-on courses that provide students with the necessary technical knowledge and skills needed for an entry-level position in the media technology industry. The certificate provides students wishing to enter the media industry a fast-track route toward that goal. Students wishing to continue toward the Media Technology Associate in Applied Science Degree will find that all courses from this option will apply.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

INFORMATION

Contact the Media Technology Program, Technology and Learning Center, Room 124, telephone number (517) 483-1670.

REQUIREMENTS

TOTAL: 16 CREDITS

CODE	TITLE	CREDIT HOURS
MTEC 110	Intro Broadcast/Elec Media	4
MTEC 120	Audio Production I	4
MTEC 130	Radio Production I	4
MTEC 150	TV Production I	4

LIMITED CHOICE REQUIREMENTS

TOTAL: 22–24 CREDITS

Complete the indicated number of credits from *each* CHOICE listed below.

CHOICE 1: Media Technology (Choose one subchoice) 22–24 Credits

Subchoice 1A: Audio/Radio

MTEC 121	Audio Recording I	4
MTEC 122	Sound Reinforcement	4
MTEC 220	Audio Production II	4
MTEC 221	Audio Recording II	4
MTEC 223	Sound Reinforcement Practicum	2
MTEC 230	Radio Production II	4
MTEC 232	Radio Workshop (See Note 1)	2

Subchoice 1B: Video/Television

MTEC 152	Video Production Techniques	3
MTEC 153	Video Post-Production Technqs	3
MTEC 250	TV Production II	4
MTEC 251	Advanced Field Production	4
MTEC 252	Lighting for Television/Video	3
MTEC 254	Electronic Presentat Graphics	3
MTEC 255	Video Workshop (See Note 2)	2

Subchoice 1C: General Media Occupations (See Note 3)

MINIMUM TOTAL 38

NOTES:

1. A Media Technology major may not apply more than four credits in MTEC 232 toward this certificate.
2. A Media Technology major may not apply more than four credits in MTEC 255 toward this certificate.
3. Credits must be taken from Subchoices 1A or 1B and/or departmentally approved MTEC electives or other departmentally approved electives. Students following Subchoice 1C must consult with a Media Technology Program Advisor regarding course selection.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III
MTEC 110	Lim. Ch.	Lim. Ch.
MTEC 120	Lim. Ch.	Lim. Ch.
MTEC 130	Lim. Ch.	Lim. Ch.
MTEC 150	Lim. Ch.	

**MOTION PICTURE DIRECTION
ASSOCIATE IN APPLIED SCIENCE DEGREE**

Curriculum Code: 0900 (Effective Fall 2001–Summer 2006)

Motion pictures bring together elements from all the other arts: writing, photography, theater, music, dance, and all the visual arts. The Motion Picture Direction program gives students extensive practical experience working with other artists and technicians to create dramatic, documentary, experimental, or animated films. The degree is designed for students who wish to become screenwriters, directors, and film editors, the people who guide the film story-telling process. Entry-level jobs include production assistants as well as apprentices and interns in specialized roles with independent film production companies, advertising firms, and major film studios. **Not all courses in this program transfer to all colleges.** Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Art, Design and Multimedia Program, Academic and Office Facility, Room 314, telephone number (517) 483-1476.

REQUIREMENTS

TOTAL: 20 CREDITS

CODE	TITLE	CREDIT HOURS
FILM 118	Film Production I	4
FILM 226	Film Production II	4
FILM 227	Film Production III	4
IMAG 111	Intro to Photographic Tech I	4
WRIT 121	Composition I	4

LIMITED CHOICE REQUIREMENTS

TOTAL: 40-42 CREDITS

Complete the indicated number of credits from **each CHOICE** listed below.

CHOICE 1: General Education Core Areas 9 Credits

(See the *GENERAL EDUCATION* section above)

Writing Core Area (See Note 1)	0
Speech Communication Core Area	3
Science/Technology Core Area	3
Global Perspectives and Diversity Core Area	3
Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)	

CHOICE 2: Techniques and Technology 25 Credits

ARTS 102	2-Dimensional Design	3
ARTS 171	Computer Graphics/Photography	3
ARTS 195	Employ/Busn Issues for Artists	1
FILM 203	Topics in Film/Animation	3
FILM 220	Screenwriting	3
MTEC 120	Audio Production I	4
MTEC 152	Video Production Techniques	3
MTEC 153	Video Post-Production Technqs	3
STEC 140	Theatrical Make-Up/Wardrobe	3
THEA 120	Introduction to Acting	2
THEA 220	Play Directing	3
WRIT 260	Creative Writing I	3
WRIT 282	Forum for Authors	3

CHOICE 3: Social Issues 3-4 Credits

ENGL 240	The Film as Art	4
MTEC 243	Ethics/Social Impact of Media (See Note 2)	3

CHOICE 4:	Capstone Project	3-4 Credits
FILM 281	Motion Picture Internship	3
FILM 290	Motion Picture Portfolio	4

MINIMUM TOTAL

60

NOTES:

1. Students completing *REQUIREMENTS* have fulfilled the requirements for this Core area.
2. Students in this curriculum may be granted approval to waive the prerequisites for this course by contacting an advisor in the Art, Design and Multimedia Program prior to registration.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
FILM 118	FILM 226	FILM 227	Lim.Ch.
IMAG 111	Lim.Ch.	Lim.Ch.	Lim.Ch.
WRIT 121	Lim.Ch.	Lim.Ch.	Lim.Ch.
Lim.Ch.	Lim.Ch.	Lim.Ch.	Lim.Ch.
Lim.Ch.			Lim.Ch.

STUDENTS ARE RESPONSIBLE FOR COMPLETING ALL REQUIREMENTS AS STATED. THE ONLY OFFICIAL DOCUMENTATION OF PROGRAM COMPLETION STATUS IS AN AUDIT CONDUCTED BY THE REGISTRAR'S OFFICE THAT IS INITIATED WHEN STUDENTS APPLY FOR A DEGREE OR CERTIFICATE. STUDENTS ARE EXPECTED TO APPLY ONE SEMESTER PRIOR TO THE SEMESTER THEY INTEND TO GRADUATE.

**MOTION PICTURE PRODUCTION
ASSOCIATE IN APPLIED SCIENCE DEGREE**

Curriculum Code: 0902 (Effective Fall 2001–Summer 2006)

Since the first film screening in 1895, motion pictures have grown into one of the world's most influential communication media and the United States' second leading export. The Motion Picture Production degree gives students extensive hands-on experience in creative and technical filmmaking skills, and it provides the opportunity to build a demonstration reel showcasing a student's ability. Filmmakers usually work in teams, each member specializing in one field such as cinematography, sound recording, lighting, special effects, or animation. While most films are produced by California companies, there are motion pictures made in every state. Filmmakers may work as independent contractors or find employment in companies that rent facilities, sell equipment, or contract services for film productions. **Not all courses in this program transfer to all colleges.** Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Art, Design and Multimedia Program, Academic and Office Facility, Room 314, telephone number (517) 483-1476.

REQUIREMENTS

TOTAL: 37 CREDITS

CODE	TITLE	CREDIT HOURS
FILM 118	Film Production I	4
FILM 226	Film Production II	4
FILM 227	Film Production III	4
IMAG 111	Intro to Photographic Tech I	4
IMAG 112	Design for Imaging Tech	3
IMAG 113	Lighting Concepts/Applications	3
IMAG 114	Intro Photographic Color Tech	3
IMAG 117	Intro to Photographic Tech II	4
MTEC 120	Audio Production I	4
WRIT 121	Composition I	4

LIMITED CHOICE REQUIREMENTS

TOTAL: 24–26 CREDITS

Complete the indicated number of credits from *each CHOICE* listed below.

CHOICE 1: General Education Core Areas 6 Credits
(See the *GENERAL EDUCATION* section above)

Writing Core Area (See Note 1)	0
Speech Communication Core Area	0
Science/Technology Core Area (See Note 2)	3
Global Perspectives and Diversity Core Area	3
Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)	3

CHOICE 2: Techniques and Technology 12 Credits

ARTS 171	Computer Graphics/Photography	3
ARTS 195	Employ/Busn Issues for Artists	1
ELCT 161	Soldering/Desoldering	1
ELTE 100	Electrical Safety Practices	1
FILM 203	Topics in Film/Animation	3
FILM 220	Screenwriting	3
MTEC 121	Audio Recording I	4
MTEC 152	Video Production Techniques	3
MTEC 153	Video Post-Production Technqs	3
STEC 100	Intro to Stage Tech Industry	2
STEC 120	Stage Lighting and Electricity	3
STEC 130	Audio/Visual Technology	3
STEC 140	Theatrical Make-Up/Wardrobe	3

CHOICE 3:	Social Issues	3–4 Credits
ENGL 240	The Film as Art	4
MTEC 243	Ethic/Social Impact of Media (See Note 3)	3

CHOICE 4:	Capstone Project	3–4 Credits
FILM 281	Motion Picture Internship	3
FILM 290	Motion Picture Portfolio	4

MINIMUM TOTAL 61

NOTES:

1. Students completing *REQUIREMENTS* have fulfilled the requirements for this Core area.
2. For students completing all requirements for this program (including IMAG 114), the Science/Technology Core Area requirement is waived.
3. Students in this curriculum may be granted approval to waive the prerequisites for this course by contacting an advisor in the Art, Design and Multimedia Program prior to registration.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
FILM 118	FILM 226	FILM 227	Lim.Ch.
IMAG 111	IMAG 114	MTEC 120	Lim.Ch.
IMAG 112	IMAG 117	Lim.Ch.	Lim.Ch.
IMAG 113	WRIT 121	Lim.Ch.	Lim.Ch.
Lim.Ch.	Lim.Ch.		

**MOTION PICTURE PRODUCTION
CERTIFICATE OF ACHIEVEMENT**

Curriculum Code: 0901 (Effective Fall 2001–Summer 2006)

This program is designed for students who already have a degree or who are completing a degree in another area and wish to gain technical and creative hands-on experience to build a demonstration reel showcasing their skills.

REQUIREMENTS

TOTAL: 20 CREDITS

CODE	TITLE	CREDIT HOURS
FILM 118	Film Production I	4
FILM 226	Film Production II	4
FILM 227	Film Production III	4
IMAG 111	Intro to Photographic Tech I	4
WRIT 121	Composition I	4

LIMITED CHOICE REQUIREMENTS

TOTAL: 15–18 CREDITS

Complete the indicated number of credits from *each CHOICE* listed below.

CHOICE 1: Social Issues 3–4 Credits

ENGL 240	The Film as Art	4
MTEC 243	Ethics/Social Impact of Media (See Note 1)	3

CHOICE 2: Techniques and Technology 9–10 Credits

ARTS 195	Employ/Busn Issues of Artists	1
FILM 203	Topics in Film/Animation	3
FILM 220	Screenwriting	3
MTEC 152	Video Production Techniques	3
MTEC 153	Video Post-Production Technqs	3

CHOICE 3: Capstone Project 3–4 Credits

FILM 281	Motion Picture Internship	3
FILM 290	Motion Picture Portfolio	4

MINIMUM TOTAL 35

NOTE:

1. Students in this curriculum may be granted approval to waive the prerequisites for this course by contacting an advisor in the Art, Design and Multimedia Program prior to registration.

SUGGESTED COURSE SEQUENCE

I	II	III
FILM 118	FILM 226	Lim.Ch.
IMAG 111	FILM 227	Lim.Ch.
WRIT 121	Lim.Ch.	Lim.Ch.

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**ADMINISTRATIVE ASSISTANT
ASSOCIATE IN BUSINESS DEGREE**

Curriculum Code: 0114 (Effective Fall 2001–Summer 2006)

The administrative assistant curriculum provides skills in office procedures, word processing, spreadsheets, database management, electronic mail, and formatting documents. The administrative assistant is generally responsible for coordinating office functions and is characterized by varied skills and flexibility. Specific duties may include activities related to communications, personnel, budget, records management, and computers. Sample job titles include office manager, administrative secretary, and administrative assistant. Employment opportunities can be found in almost every company.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics. For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Business Careers Department, Old Central Building, Room 210, telephone number (517) 483-1522.

REQUIREMENTS

TOTAL: 45 CREDITS

CODE	TITLE	CREDIT HOURS
ACCG 100	Practical Accounting Non-Major	3
CABS 113	Microsoft Word Office/Int Key	4
CABS 118	Adv Microsoft Word for Office	4
CISB 102	Internet Literacy	3
MATH 117	Math for Business	4
OADM 102	Editing Business Documents	2
OADM 195	Human Behavior in Work Place	3
OADM 200	Critical Thinking	3
OADM 215	Records and Info Management I	3
OADM 220	Administrative Office Mgmt	4
OADM 240	Office Internship	3
OADM 275	Cultural Differences in Busn	3
WRIT 114	Business English	3
WRIT 127	Business Writing	3

LIMITED CHOICE REQUIREMENTS

TOTAL: 15-16 CREDITS

Complete the indicated number of credits from each CHOICE listed below.

CHOICE 1: General Education Core Areas 6 Credits

(See the GENERAL EDUCATION section above)

Writing Core Area (See Note 1)	0
Speech Communication Core Area	3
Science/Technology Core Area	3
Global Perspectives and Diversity Core Area (See Note 1)	0
Mathematics Competency (See Note 1)	

CHOICE 2: Office Administration Related 5-6 Credits

LEGL 215	Busn Law I, Basic Principles	3
OADM 110	Machine Transcription	3
OADM 203	Professional Office Procedures	2

CHOICE 3: Computer Related 4 Credits

CABS 104	Skillbuilding for Computers	2
CABS 126	Excel	2
CABS 133	Microsoft Access Database	2
CABS 182	Microsoft PowerPoint/Windows	2
CABS 219	Advanced Microsoft Word	2

MINIMUM TOTAL 60

NOTES:

1. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.
2. It is recommended that students entering this curriculum have keyboarding and Windows experience. This experience may come from life or work experience, CABS 100 seminars, CABS 101, or CABS 195.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
ACCG 100	CABS 118	MATH 117	OADM 220
CABS 113	CISB 102	OADM 200	OADM 275
OADM 195	OADM 102	OADM 240	Lim.Ch.1
OADM 215	WRIT 127	Lim.Ch.1	Lim.Ch.2
WRIT 114	Lim.Ch.2	Lim.Ch.3	Lim.Ch.3

STUDENTS ARE RESPONSIBLE FOR COMPLETING ALL REQUIREMENTS AS STATED. THE ONLY OFFICIAL DOCUMENTATION OF PROGRAM COMPLETION STATUS IS AN AUDIT CONDUCTED BY THE REGISTRAR'S OFFICE THAT IS INITIATED WHEN STUDENTS APPLY FOR A DEGREE OR CERTIFICATE. STUDENTS ARE EXPECTED TO APPLY ONE SEMESTER PRIOR TO THE SEMESTER THEY INTEND TO GRADUATE.

**LEGAL SECRETARY
ASSOCIATE IN BUSINESS DEGREE****Curriculum Code: 0207 (Effective Fall 2001–Summer 2006)**

Legal secretaries are part of a law office team and report to one or more attorneys. Legal secretaries take dictation and are skilled in the use of computers and transcription equipment. They prepare legal papers and correspondence of a legal nature, such as summonses, complaints, motions, and subpoenas. Graduates of this program are prepared to work in law offices, courts, public agencies, and in legal departments of larger businesses and organizations.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Business Careers Department, Old Central Building, Room 210, telephone number (517) 483-1522.

REQUIREMENTS**TOTAL: 48 CREDITS**

CODE	TITLE	CREDIT HOURS
CABS 113	Microsoft Word Office/Int Key	4
CABS 118	Adv Microsoft Word for Office	4
LEGL 215	Busn Law I, Basic Principles	3
MATH 117	Math for Business	4
OADM 102	Editing Business Documents	2
OADM 110	Machine Transcription	3
OADM 195	Human Behavior in Work Place	3
OADM 200	Critical Thinking	3
OADM 206	Legal Vocabulary and Form Prep	3
OADM 215	Records and Info Management I	3
OADM 220	Administrative Office Mgmt	4
OADM 240	Office Internship	3
OADM 275	Cultural Differences in Busn	3
WRIT 114	Business English	3
WRIT 127	Business Writing	3

LIMITED CHOICE REQUIREMENTS**TOTAL: 12–14 CREDITS**

Complete the indicated number of credits from each CHOICE listed below.

CHOICE 1: General Education Core Areas	6 Credits
<i>(See the GENERAL EDUCATION section above)</i>	
Writing Core Area <i>(See Note 1)</i>	0
Speech Communication Core Area	3
Science/Technology Core Area	3
Global Perspectives and Diversity Core Area <i>(See Note 1)</i>	0
Mathematics Competency <i>(See Note 1)</i>	
CHOICE 2: Office Administration Related	2–3 Credits
ACCG 100 Practical Accounting Non-Major	3
OADM 203 Professional Office Procedures	2
CHOICE 3: Computer Related	4–5 Credits
CABS 104 Skillbuilding for Computers	2
CABS 126 Excel	2
CABS 133 Microsoft Access Database	2
CABS 182 Microsoft PowerPoint/Windows	2
CABS 219 Advanced Microsoft Word	2
CISB 102 Internet Literacy	3
MINIMUM TOTAL	60

NOTES:

1. Students completing *REQUIREMENTS* have fulfilled the requirements for this Core area.
2. It is recommended that students entering this curriculum have keyboarding and Windows experience. This experience may come from life or work experience, CABS 100 seminars, CABS 101, or CABS 195.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
CABS 113	CABS 118	OADM 200	MATH 117
OADM 110	LEGL 215	OADM 215	OADM 220
OADM 206	OADM 102	OADM 240	OADM 275
WRIT 114	OADM 195	WRIT 127	Lim.Ch.1
Lim.Ch.3	Lim.Ch.1	Lim.Ch.2	Lim.Ch.3

STUDENTS ARE RESPONSIBLE FOR COMPLETING ALL REQUIREMENTS AS STATED. THE ONLY OFFICIAL DOCUMENTATION OF PROGRAM COMPLETION STATUS IS AN AUDIT CONDUCTED BY THE REGISTRAR'S OFFICE THAT IS INITIATED WHEN STUDENTS APPLY FOR A DEGREE OR CERTIFICATE. STUDENTS ARE EXPECTED TO APPLY ONE SEMESTER PRIOR TO THE SEMESTER THEY INTEND TO GRADUATE.

**MEDICAL ADMIN ASSISTANT
ASSOCIATE IN BUSINESS DEGREE**

Curriculum Code: 0185 (Effective Fall 2001-Summer 2006)

The medical administrative assistant is a specialist in the healthcare profession, the second-largest industry in the nation. The need for medical administrative assistants is expected to expand at a tremendous rate due in part to increased specialization in medical treatments, and to technological advances in the diagnosis and treatment of diseases. Medical administrative assistants facilitate the work of physicians, researchers, and other health team professionals by managing health information, transcribing medical dictation, coding and billing for medical procedures, scheduling medical appointments and procedures, and arranging patient hospitalizations. Job opportunities are readily available in hospitals, medical centers, medical clinics, insurance companies, managed care organizations, and other private and public sector healthcare settings. **Not all courses in this program transfer to all colleges.** Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Business Careers Department, Old Central Building, Room 210, telephone number (517) 483-1522.

REQUIREMENTS

TOTAL: 58 CREDITS

CODE	TITLE	CREDIT HOURS
ACCG 100	Practical Accounting Non-Major	3
BIOL 145	Introductory Anat & Physiology	4
CABS 113	Microsoft Word Office/Int Key	4
CABS 118	Adv Microsoft Word for Office	4
CHSE 123	Medical Insurance Billing I	3
CHSE 124	Medical Insurance Billing II	3
HUMS 265	Sem:Ethical Issues in Medicine	3
MATH 117	Math for Business	4
OADM 102	Editing Business Documents	2
OADM 197	Medical Vocabulary	3
OADM 198	Health Information Management	3
OADM 207	Medical Transcription	3
OADM 220	Administrative Office Mgmt	4
OADM 222	Advanced Medical Transcription	3
OADM 228	Financial Mgmt in Health Care	3
OADM 275	Cultural Differences in Busn	3
WRIT 114	Business English	3
WRIT 127	Business Writing	3

LIMITED CHOICE REQUIREMENTS

TOTAL: 6 CREDITS

Complete the indicated number of credits from *each CHOICE* listed below.

CHOICE 1:	General Education Core Areas	6 Credits
(See the GENERAL EDUCATION section above)		
	Writing Core Area (See Note 1)	0
	Speech Communication Core Area	3
	Science/Technology Core Area	3
	Global Perspectives and Diversity Core Area (See Note 1)	0
	Mathematics Competency (See Note 1)	0

MINIMUM TOTAL 64

NOTES:

1. Students completing *REQUIREMENTS* have fulfilled the requirements for this Core area.
2. It is recommended that students entering this curriculum have keyboarding and Windows experience. This experience may come from life or work experience, CABS 100 seminars, CABS 101, CABS 104, or CABS 195.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
ACCG 100	CABS 118	CHSE 123	CHSE 124
BIOL 145	OADM 198	HUMS 265	MATH 117
CABS 113	OADM 220	OADM 207	OADM 102
OADM 197	OADM 228	WRIT 127	OADM 222
OADM 275	WRIT 114	Lim.Ch.1	Lim.Ch.1

STUDENTS ARE RESPONSIBLE FOR COMPLETING ALL REQUIREMENTS AS STATED. THE ONLY OFFICIAL DOCUMENTATION OF PROGRAM COMPLETION STATUS IS AN AUDIT CONDUCTED BY THE REGISTRAR'S OFFICE THAT IS INITIATED WHEN STUDENTS APPLY FOR A DEGREE OR CERTIFICATE. STUDENTS ARE EXPECTED TO APPLY ONE SEMESTER PRIOR TO THE SEMESTER THEY INTEND TO GRADUATE.

**MEDICAL TRANSCRIPTIONIST
ASSOCIATE IN BUSINESS DEGREE**

Curriculum Code: 0756 (Effective Fall 2001–Summer 2006)

A medical transcriptionist is a medical language specialist who interprets and transcribes dictation by physicians and other healthcare professionals in order to document patient care and facilitate delivery of healthcare services. Transcription areas may include patient assessment, workup, therapeutic procedures, clinical course, diagnosis, and prognosis. The medical transcriptionist can choose from a variety of employment options including hospitals, medical centers, medical clinics, insurance companies, managed care organizations, medical transcription services, and home office settings. Medical transcription is designated as one of the ten start-up businesses for the future. The employment outlook for medical transcriptionists is bright, with many opportunities for success and personal growth. **Not all courses in this program transfer to all colleges.** Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Business Careers Department, Old Central Building, Room 210, telephone number (517) 483-1522.

REQUIREMENTS

TOTAL: 53 CREDITS

CODE	TITLE	CREDIT HOURS
BIOL 145	Introduction Anat & Physiology	4
CABS 113	Microsoft Word Office/Int Key	4
CABS 118	Adv Microsoft Word for Office	4
CHSE 123	Medical Insurance Billing I	3
HUMS 265	Sem:Ethical Issues in Medicine	3
MATH 117	Math for Business	4
OADM 102	Editing Business Documents	2
OADM 197	Medical Vocabulary	3
OADM 198	Health Information Management	3
OADM 203	Professional Office Procedures	2
OADM 207	Medical Transcription	3
OADM 222	Advanced Medical Transcription	3
OADM 228	Financial Mgmt in Health Care	3
OADM 240	Office Internship	3
OADM 275	Cultural Differences in Busn	3
WRIT 114	Business English	3
WRIT 127	Business Writing	3

LIMITED CHOICE REQUIREMENTS

TOTAL: 12-14 CREDITS

Complete the indicated number of credits from *each* CHOICE listed below.

CHOICE 1: General Education Core Areas 6 Credits

(See the GENERAL EDUCATION section above)

Writing Core Area (See Note 1)	0
Speech Communication Core Area	3
Science/Technology Core Area	3
Global Perspectives and Diversity Core Area (See Note 1)	0
Mathematics Competency (See Note 1)	0

CHOICE 2: Computer Related 4-5 Credits

CABS 104	Skillbuilding for Computers	2
CABS 110	Microsoft Office	3
CABS 126	Excel	2
CABS 133	Microsoft Access Database	2
CABS 219	Advanced Microsoft Word	2
CISB 102	Internet Literacy	3

CHOICE 3: Business Related (See Note 3) 2-3 Credits

ACCG 100	Practical Accounting Non-Major	3
BUSN 118	Introduction to Business	3
MGMT 225	Principles of Management	3
MKTG 200	Principles of Marketing	3

MINIMUM TOTAL 65

STUDENTS ARE RESPONSIBLE FOR COMPLETING ALL REQUIREMENTS AS STATED. THE ONLY OFFICIAL DOCUMENTATION OF PROGRAM COMPLETION STATUS IS AN AUDIT CONDUCTED BY THE REGISTRAR'S OFFICE THAT IS INITIATED WHEN STUDENTS APPLY FOR A DEGREE OR CERTIFICATE. STUDENTS ARE EXPECTED TO APPLY ONE SEMESTER PRIOR TO THE SEMESTER THEY INTEND TO GRADUATE.

NOTES:

1. Students completing *REQUIREMENTS* have fulfilled the requirements for these Core areas.
2. It is recommended that students entering this curriculum have keyboarding and Windows experience. This experience may come from life or work experience, CABS 100 seminars, CABS 101, or CABS 195.
3. Students may also choose a maximum of two credits total from the T.I.M.E. Series (course codes MGMT 240 through MGMT 279).

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
BIOL 145	CABS 118	CHSE 123	HUMS 265
CABS 113	OADM 102	OADM 207	MATH 117
OADM 197	OADM 198	OADM 275	OADM 222
OADM 203	OADM 228	WRIT 127	OADM 240
WRIT 114	Lim.Ch.1	Lim.Ch.1	Lim.Ch.3
Lim.Ch.2	Lim.Ch.2		

**MEDICAL TRANSCRIPTIONIST
CERTIFICATE OF ACHIEVEMENT**

Curriculum Code: 0968 (Effective Fall 2001–Summer 2006)

This certificate program includes key courses that will prepare a student for employment as a medical transcriptionist. The medical transcriptionist is a multi-skilled professional and can choose from a variety of employment opportunities including hospitals, clinics, insurance companies, managed care organizations, medical transcription services, and home office settings. All course work may be applied toward the associate degree.

REQUIREMENTS

TOTAL: 33 CREDITS

CODE	TITLE	CREDIT HOURS
BIOL 145	Introductory Anat & Physiology	4
CABS 110	Microsoft Office	3
CABS 113	Microsoft Word Office/Int Key	4
CISB 102	Internet Literacy	3
OADM 102	Editing Business Documents	2
OADM 197	Medical Vocabulary	3
OADM 198	Health Information Management	3
OADM 203	Professional Office Procedures	2
OADM 207	Medical Transcription	3
OADM 222	Advanced Medical Transcription	3
OADM 228	Financial Mgmt in Health Care	3

MINIMUM TOTAL 33

NOTES:

1. It is recommended that students entering this curriculum have keyboarding and Windows experience. This experience may come from life or work experience, CABS 100 seminars, CABS 101, CABS 104 or CABS 195.

SUGGESTED COURSE SEQUENCE

I	II
CABS 113	BIOL 145
CISB 102	CABS 110
OADM 102	OADM 198
OADM 197	OADM 203
OADM 207	OADM 222
OADM 228	

**OFFICE ASSISTANT
CERTIFICATE OF COMPLETION**

Curriculum Code: 0789 (Effective Fall 2001–Summer 2006)

Students completing this program are prepared for entry-level positions in an office. Training is focused on basic computer skills, editing documents, general office procedures, and internet usage. Additional training will enhance an individual's employment and advancement opportunities.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

INFORMATION

Contact the Business Careers Department, Old Central Building, Room 210, telephone number (517) 483-1522.

REQUIREMENTS

TOTAL: 14 CREDITS

CODE	TITLE	CREDIT HOURS
CABS 110	Microsoft Office	3
CABS 113	Microsoft Word Office/Int Key	4
CISB 102	Internet Literacy	3
OADM 102	Editing Business Documents	2
OADM 203	Professional Office Procedures	2

MINIMUM TOTAL 14

NOTE:

- It is recommended that students entering this curriculum have keyboarding and Windows experience. This experience may come from life or work experience, CABS 100 seminars, CABS 101, CABS 104 or CABS 195.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

- I
- CABS 110
 - CABS 113
 - CISB 102
 - OADM 102
 - OADM 203

**OFFICE SPECIALIST: COMP APPS
CERTIFICATE OF ACHIEVEMENT**

Curriculum Code: 0924 (Effective Fall 2001–Summer 2006)

An office specialist is skilled in the use of word processing, database, spreadsheet, and graphics software. Responsibilities include office procedures, business document preparation, proofreading, records management, and internet usage. Additional training will enhance an individual's employment and advancement opportunities.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

INFORMATION

Contact the Business Careers Department, Old Central Building, Room 210, telephone number (517) 483-1522.

REQUIREMENTS

TOTAL: 32 CREDITS

CODE	TITLE	CREDIT HOURS
ACCG 100	Practical Accounting Non-Major	3
CABS 113	Microsoft Word Office/Int Key	4
CABS 126	Excel	2
CABS 133	Microsoft Access Database	2
CABS 182	Microsoft PowerPoint/Windows	2
CISB 102	Internet Literacy	3
OADM 102	Editing Business Documents	2
OADM 195	Human Behavior in Work Place	3
OADM 203	Professional Office Procedures	2
OADM 215	Records and Info Management I	3
OADM 240	Office Internship	3
WRIT 114	Business English	3

MINIMUM TOTAL 32

NOTE:

- It is recommended that students entering this curriculum have keyboarding and Windows experience. This experience may come from life or work experience, CABS 100 seminars, CABS 101, CABS 104, or CABS 195.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

- | I | II |
|----------|----------|
| ACCG 100 | CABS 126 |
| CABS 113 | CABS 133 |
| CABS 182 | CISB 102 |
| OADM 195 | OADM 102 |
| OADM 203 | OADM 215 |
| WRIT 114 | OADM 240 |

STUDENTS ARE RESPONSIBLE FOR COMPLETING ALL REQUIREMENTS AS STATED. THE ONLY OFFICIAL DOCUMENTATION OF PROGRAM COMPLETION STATUS IS AN AUDIT CONDUCTED BY THE REGISTRAR'S OFFICE THAT IS INITIATED WHEN STUDENTS APPLY FOR A DEGREE OR CERTIFICATE. STUDENTS ARE EXPECTED TO APPLY ONE SEMESTER PRIOR TO THE SEMESTER THEY INTEND TO GRADUATE.

**RECORDS MANAGEMENT
ASSOCIATE IN BUSINESS DEGREE**

Curriculum Code: 0195 (Effective Fall 2001–Summer 2006)

Records and information management specialists account for and control an organization's information records. They record, store, and retrieve information and data such as correspondence, invoices, receipts, and other database files using various manual and computerized data storage, retrieval, and filing systems. Graduates of this program are prepared to work in both government and business sectors. **Not all courses in this program transfer to all colleges.** Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Business Careers Department, Old Central Building, Room 210, telephone number (517) 483-1522.

REQUIREMENTS**TOTAL: 44 CREDITS**

CODE	TITLE	CREDIT HOURS
CABS 113	Microsoft Word Office/Int Key	4
CABS 133	Microsoft Access Database	2
LEGL 215	Busn Law I, Basic Principles	3
MATH 117	Math for Business	4
OADM 102	Editing Business Documents	2
OADM 195	Human Behavior in Work Place	3
OADM 200	Critical Thinking	3
OADM 215	Records and Info Management I	3
OADM 216	Records and Info Management II	4
OADM 220	Administrative Office Mgmt	4
OADM 240	Office Internship	3
OADM 275	Cultural Differences in Busn	3
WRIT 114	Business English	3
WRIT 127	Business Writing	3

LIMITED CHOICE REQUIREMENTS**TOTAL: 16–18 CREDITS**

Complete the indicated number of credits from *each CHOICE* listed below.

CHOICE 1:	General Education Core Areas	6 Credits
	(See the <i>GENERAL EDUCATION</i> section above)	
	Writing Core Area (See Note 1)	0
	Speech Communication Core Area	3
	Science/Technology Core Area	3
	Global Perspectives and Diversity Core Area (See Note 1)	0
	Mathematics Competency (See Note 1)	
CHOICE 2:	Office Administration Related	5–6 Credits
ACCG 100	Practical Accounting Non-Major	3
BUSN 118	Introduction to Business	3
MGMT 225	Principles of Management	3
OADM 203	Professional Office Procedures	2
CHOICE 3:	Computer Related	5–6 Credits
CABS 110	Microsoft Office	3
CABS 126	Excel	2
CABS 182	Microsoft PowerPoint/Windows	2
CABS 232	Advanced Microsoft Access	2
CISB 102	Internet Literacy	3
MINIMUM TOTAL		60

NOTES:

- Students completing *REQUIREMENTS* have fulfilled the requirements for this Core area.
- It is recommended that students entering this curriculum have keyboarding and Windows experience. This experience may come from life or work experience, CABS 100 Seminars, CABS 101, CABS 104, or CABS 195.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
CABS 113	CABS 133	LEGL 215	MATH 117
OADM 195	OADM 102	OADM 200	OADM 275
OADM 215	OADM 216	OADM 240	Lim.Ch.1
WRIT 114	OADM 220	WRIT 127	Lim.Ch.2
Lim.Ch.1	Lim.Ch.3	Lim.Ch.2	Lim.Ch.3

STUDENTS ARE RESPONSIBLE FOR COMPLETING ALL REQUIREMENTS AS STATED. THE ONLY OFFICIAL DOCUMENTATION OF PROGRAM COMPLETION STATUS IS AN AUDIT CONDUCTED BY THE REGISTRAR'S OFFICE THAT IS INITIATED WHEN STUDENTS APPLY FOR A DEGREE OR CERTIFICATE. STUDENTS ARE EXPECTED TO APPLY ONE SEMESTER PRIOR TO THE SEMESTER THEY INTEND TO GRADUATE.

**MUSIC
ASSOCIATE IN APPLIED ARTS DEGREE**

Curriculum Code: 0270 (Effective Fall 2001–Summer 2006)

The Music Program enables students to transfer to a four-year institution after completing studies in music theory, piano and applied lessons. In addition to academic music classes, the curriculum includes training in a private instrument, performances with fine ensembles, and introduction to computers and music. Emphasis is placed on integrating skills acquisition with performing opportunities. **Not all courses in this program transfer to all colleges.** Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

This is a selective admission program. In order to be considered as a candidate for this program, students must meet basic admission requirements beyond those required for admission to the college.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

The admission requirements for this program may change each academic year. For the most recent application information, contact the Humanities and Performing Arts Department, Arts and Sciences Building, Room 255, telephone number (517) 483-1018 or the LCC Admissions Office, Suite 2300, Gannon Vocational-Technical Center, telephone number (517) 483-1254.

REQUIREMENTS FOR ADMISSION TO THE MUSIC PROGRAM

Curriculum Code: 0721

In order to be considered as a candidate for this program, students must complete the following requirements:

- Submit high school transcript or GED and all college transcripts.
- Interview with Performing Arts advisor to discuss curriculum requirements. Repertoire requirements for the audition pertaining to their specific instrument will be described in detail.
- Audition. The actual audition day will consist of a live performance on instrument or voice in front of a faculty panel. A theory test covering written and aural theory will also be administered on the audition day. Names of students passing this phase of the Selective Admissions will be forwarded to the Admissions Office for processing.

MUSIC PROGRAM REQUIREMENTS

Curriculum Code: 0270

REQUIREMENTS

TOTAL: 45 CREDITS

CODE	TITLE	CREDIT HOURS
ENGL 122	Writing: Literature and Ideas	4
MUSC 138	Class Piano Major I	2
MUSC 139	Class Piano Major II	2
MUSC 163	Aural Skills I	1
MUSC 164	Aural Skills II	1
MUSC 193	Basic Musicianship I	3
MUSC 194	Basic Musicianship II	3
MUSC 240	World Music History I	4
MUSC 241	World Music History II	4
MUSC 263	Aural Skills III	1
MUSC 264	Aural Skills IV	1
MUSC 293	Advanced Musicianship I	3
MUSC 294	Advanced Musicianship II	3
MUSC 297	Synthesizers & Computer Music	2
POLS 120	American Political System	4
SPCH 120	Dynamics of Communication	3
WRIT 121	Composition I	4

STUDENTS ARE RESPONSIBLE FOR COMPLETING ALL REQUIREMENTS AS STATED. THE ONLY OFFICIAL DOCUMENTATION OF PROGRAM COMPLETION STATUS IS AN AUDIT CONDUCTED BY THE REGISTRAR'S OFFICE THAT IS INITIATED WHEN STUDENTS APPLY FOR A DEGREE OR CERTIFICATE. STUDENTS ARE EXPECTED TO APPLY ONE SEMESTER PRIOR TO THE SEMESTER THEY INTEND TO GRADUATE.

LIMITED CHOICE REQUIREMENTS (See Note 1) **TOTAL: 18–20 CREDITS**
Complete the indicated number of credits from *each CHOICE* listed below.

CHOICE 1: General Education Core Areas **6 Credits**
(See the *GENERAL EDUCATION* section above)

Writing Core Area (See Note 2)	0
Speech Communication Core Area (See Note 2)	0
Science/Technology Core Area	3
Global Perspectives and Diversity Core Area	3
Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)	

CHOICE 2: Private Lessons (See Note 3) **8 Credits**

MUSC 157 Applied Lesson I	2
MUSC 158 Applied Lesson II	2
MUSC 257 Applied Lesson III	2
MUSC 258 Applied Lesson IV	2

CHOICE 3: Ensembles and Voice (Choose 1 Subchoice) **4–6 Credits**

Subchoice 3A: Voice Requirements (See Note 3)

MUSC 108 Concert Choir	1
MUSC 179 Class Voice Major I (See Note 4)	1
MUSC 180 Class Voice Major II (See Note 4)	1

Subchoice 3B: Instrumental Requirements (See Note 3)

MUSC 119 Lansing Concert Band	1
MUSC 121 Percussion Ensemble	1
MUSC 123 Jazz Ensemble	1

MINIMUM TOTAL **63**

NOTES:

- It is strongly recommended that students intending to transfer to 4-year institutions should meet additional course requirements as outlined in the MACRAO Transfer Agreement (see "Transfer Information"). Students should also consult appropriate Curriculum Guides for transfer to specific 4-year programs (available from advisors.)
- Students completing *REQUIREMENTS* have fulfilled the requirements for these Core areas.
- Course may be repeated and **MUST** be taken each semester student is enrolled as a major.
- Course required only of Voice Majors, and must be taken in addition to the required vocal ensemble.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
MUSC 138	ENGL 122	MUSC 240	MUSC 241
MUSC 163	MUSC 139	MUSC 263	MUSC 264
MUSC 193	MUSC 164	MUSC 293	MUSC 294
WRIT 121	MUSC 194	POLS 120	Lim. Ch. 1
Lim. Ch. 1	MUSC 297	SPCH 120	Lim. Ch. 2
Lim. Ch. 2	Lim. Ch. 2	Lim. Ch. 2	Lim. Ch. 3
Lim. Ch. 3	Lim. Ch. 3	Lim. Ch. 3	

**MUSIC: COMMERCIAL
ASSOCIATE IN APPLIED ARTS DEGREE**

Curriculum Code: 0274 (Effective Fall 2001–Summer 2006)

The Music: Commercial Program has been designed to focus on today's music in pop and jazz idioms. It is a first step toward a professional career in commercial music, such as studio engineer, band manager or performer. In addition to academic music classes, the curriculum includes training in a private instrument, performances with fine ensembles, and introduction to computers and music. Emphasis is placed on integrating skills acquisition with performance opportunities. **Not all courses in this program transfer to all colleges.** Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

This is a selective admission program. In order to be considered as a candidate for this program, students must meet basic admission requirements beyond those required for admission to the college.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

The admission requirements for this program may change each academic year. For the most recent application information, contact the Humanities and Performing Arts Department, Arts and Sciences Building, Room 255, telephone number (517) 483-1018 or the LCC Admissions Office, Room 232, Gannon Vocational-Technical Center, telephone number (517) 483-1254.

REQUIREMENTS FOR ADMISSION TO THE MUSIC: COMMERCIAL PROGRAM
Curriculum Code: 0722

In order to be considered as a candidate for this program, students must complete the following requirements:

- Submit high school transcript or GED and all college transcripts.
- Interview with Performing Arts advisor to discuss curriculum requirements. Repertoire requirements for the audition pertaining to their specific instrument will be described in detail.
- Audition. The actual audition day will consist of a live performance on instrument or voice in front of a faculty panel. A theory test covering written and aural theory will also be administered on the audition day. Names of students passing this phase of the Selective Admissions will be forwarded to the Admissions Office for processing.

MUSIC: COMMERCIAL PROGRAM REQUIREMENTS

Curriculum Code: 0274

REQUIREMENTS		TOTAL: 35 CREDITS
CODE	TITLE	CREDIT HOURS
MTEC 120	Audio Production I	4
MTEC 121	Audio Recording I	4
MUSC 138	Class Piano Major I	2
MUSC 155	Class Voice Commercial I	2
MUSC 163	Aural Skills I	1
MUSC 164	Aural Skills II	1
MUSC 193	Basic Musicianship I	3
MUSC 194	Basic Musicianship II	3
MUSC 253	Business of Music	3
MUSC 254	Band Management	2
MUSC 263	Aural Skills III	1
MUSC 264	Aural Skills IV	1
MUSC 293	Advanced Musicianship I	3
MUSC 294	Advanced Musicianship II	3
MUSC 297	Synthesizers & Computer Music	2

STUDENTS ARE RESPONSIBLE FOR COMPLETING ALL REQUIREMENTS AS STATED. THE ONLY OFFICIAL DOCUMENTATION OF PROGRAM COMPLETION STATUS IS AN AUDIT CONDUCTED BY THE REGISTRAR'S OFFICE THAT IS INITIATED WHEN STUDENTS APPLY FOR A DEGREE OR CERTIFICATE. STUDENTS ARE EXPECTED TO APPLY ONE SEMESTER PRIOR TO THE SEMESTER THEY INTEND TO GRADUATE.

LIMITED CHOICE REQUIREMENTS TOTAL: 34 CREDITS
Complete the indicated number of credits from each CHOICE listed below.

CHOICE 1: General Education Core Areas	12 Credits
<i>(See the GENERAL EDUCATION section above)</i>	
Writing Core Area	3
Speech Communication Core Area	3
Science/Technology Core Area	3
Global Perspectives and Diversity Core Area	3
Mathematics Competency <i>(See page 23 for information on how to fulfill this requirement. Course work may be needed.)</i>	
CHOICE 2: History	4 Credits
MUSC 240 World Music History I	4
MUSC 241 World Music History II	4
MUSC 242 American Musical Theatre	2
MUSC 246 History of Blues and Jazz	2
MUSC 247 History of Rock and Roll	2
CHOICE 3: Applied Skills	1–2 Credits
MUSC 139 Class Piano Major II	2
MUSC 156 Class Voice Commercial II	2
MUSC 232 Music Seminar	1
MUSC 270 Rock Guitar	1
CHOICE 4: Private Lessons Commercial <i>(See Note 1)</i>	8 Credits
MUSC 157 Applied Lesson I	2
MUSC 158 Applied Lesson II	2
MUSC 257 Applied Lesson III	2
MUSC 258 Applied Lesson IV	2
CHOICE 5: Ensembles and Voice <i>(Choose 1 Subchoice)</i>	4 Credits
Subchoice 5A: Voice Requirements <i>(See Note 1)</i>	
MUSC 108 Concert Choir	1
Subchoice 5B: Instrumental Requirements <i>(See Note 1)</i>	
MUSC 119 Lansing Concert Band	1
MUSC 121 Percussion Ensemble	1
MUSC 123 Jazz Ensemble	1
CHOICE 6: Media Technology <i>(See Note 2)</i>	4 Credits
MTEC 122 Sound Reinforcement	4
MTEC 130 Radio Production I	4
MTEC 220 Audio Production II	4
MTEC 221 Audio Recording II	4
CHOICE 7: Performing Arts Electives	1–2 Credits
MUSC 276 Lyric Writing	2
MUSC 280 Private Composition	1
THEA 120 Introduction to Acting	2
Dance Classes <i>(See Note 3)</i>	1–2
MINIMUM TOTAL	69

NOTES:

- Courses may be repeated and **MUST** be taken each semester student is enrolled as a major.
- Other Media Technology (MTEC) courses may be substituted with department approval.
- Students may choose from 100 level DANC courses, and may need to meet other audition requirements.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
MTEC 120	MTEC 121	MUSC 253	MUSC 254
MUSC 138	MUSC 164	MUSC 263	MUSC 264
MUSC 155	MUSC 194	MUSC 293	MUSC 294
MUSC 163	MUSC 297	Lim. Ch. 1	Lim. Ch. 1
MUSC 193	Lim. Ch. 1	Lim. Ch. 2	Lim. Ch. 4
Lim. Ch. 1	Lim. Ch. 2	Lim. Ch. 4	Lim. Ch. 5
Lim. Ch. 4	Lim. Ch. 3	Lim. Ch. 5	Lim. Ch. 6
Lim. Ch. 5	Lim. Ch. 4	Lim. Ch. 7	
	Lim. Ch. 5		

**MUSIC MANAGEMENT
ASSOCIATE IN APPLIED ARTS DEGREE**

Curriculum Code: 0861 (Effective Fall 2001–Summer 2006)

The Music Management Program has been designed to focus on today's music industry. It is a first step toward a business career in the music industry; such as, studio engineer, band manager, or music retailing. In addition to academic music classes, the curriculum includes training in a private instrument, performances with fine ensembles, an introduction to computers and music, and business and management courses. Emphasis is placed on integrating musicianship and business skills. **Not all courses in this program transfer to all colleges.** Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

This is a selective admission program. In order to be considered as a candidate for this program, students must meet basic admission requirements beyond those required for admission to the college.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

The admission requirements for this program may change each academic year. For the most recent application information, contact the Humanities and Performing Arts Department, Arts and Sciences Building, Room 255, telephone number (517) 483-1018 or the LCC Admissions Office, Room 232, Gannon Vocational-Technical Center, telephone number (517) 483-1254.

REQUIREMENTS FOR ADMISSION TO THE MUSIC MANAGEMENT PROGRAM

Curriculum Code: 0862

In order to be considered as a candidate for this program, students must complete the following requirements:

- Submit high school transcript or GED and all college transcripts.
- Interview with Performing Arts advisor to discuss curriculum requirements. Repertoire requirements for the audition pertaining to their specific instrument will be described in detail.
- Audition. The actual audition day will consist of a live performance on instrument or voice in front of a faculty panel. A theory test covering written and aural theory will also be administered on the audition day. Names of students passing this phase of the Selective Admissions will be forwarded to the Admissions Office for processing.

MUSIC MANAGEMENT PROGRAM REQUIREMENTS

Curriculum Code: 0861

REQUIREMENTS		TOTAL: 52 CREDITS
CODE	TITLE	CREDIT HOURS
ACCG 210	Principles of Accounting I	4
ACCG 211	Principles of Accounting II	4
BUSN 118	Introduction to Business	3
MATH 112	Intermediate Algebra	4
MGMT 234	Diversity in the Workplace	3
MTEC 120	Audio Production I	4
MTEC 121	Audio Recording I	4
MUSC 163	Aural Skills I	1
MUSC 164	Aural Skills II	1
MUSC 193	Basic Musicianship I	3
MUSC 194	Basic Musicianship II	3
MUSC 240	World Music History I	4
MUSC 241	World Music History II	4
MUSC 253	Business of Music	3
MUSC 254	Band Management	2
MUSC 297	Synthesizers & Computer Music	2
WRIT 127	Business Writing	3

STUDENTS ARE RESPONSIBLE FOR COMPLETING ALL REQUIREMENTS AS STATED. THE ONLY OFFICIAL DOCUMENTATION OF PROGRAM COMPLETION STATUS IS AN AUDIT CONDUCTED BY THE REGISTRAR'S OFFICE THAT IS INITIATED WHEN STUDENTS APPLY FOR A DEGREE OR CERTIFICATE. STUDENTS ARE EXPECTED TO APPLY ONE SEMESTER PRIOR TO THE SEMESTER THEY INTEND TO GRADUATE.

LIMITED CHOICE REQUIREMENTS

TOTAL: 18-19 CREDITS

Complete the indicated number of credits from each CHOICE listed below.

CHOICE 1: General Education Core Areas	6-7 Credits
<i>(See the GENERAL EDUCATION section above)</i>	
Writing Core Area <i>(See Note 1)</i>	0
Speech Communication Core Area	3
Science/Technology Core Area	3-4
Global Perspectives and Diversity Core Area <i>(See Note 1)</i>	0
Mathematics Competency <i>(See page 23 for information on how to fulfill this requirement. Course work may be needed.)</i>	
CHOICE 2: Private Lessons Commercial <i>(See Note 2)</i>	8 Credits
MUSC 157 Applied Lesson I	2
MUSC 158 Applied Lesson II	2
MUSC 257 Applied Lesson III	2
MUSC 258 Applied Lesson IV	2
CHOICE 3: Ensembles and Voice <i>(Choose 1 Subchoice)</i>	4 Credits
Subchoice 3A: Vocal Requirements <i>(See Note 2)</i>	
MUSC 101 Lanswingers Vocal Ensemble	1
MUSC 102 Women's Chorus	1
MUSC 103 Men's Ensemble	1
MUSC 108 Concert Choir	1
Subchoice 3B: Instrumental Requirements <i>(See Note 2)</i>	
MUSC 119 Lansing Concert Band	1
MUSC 123 Jazz Ensemble	1
MUSC 121 Percussion Ensemble	1
MINIMUM TOTAL	70

NOTES:

- Students completing *REQUIREMENTS* have fulfilled the requirements for this Core area.
- Courses may be repeated and must be taken each semester student is enrolled as a major for the credit total indicated for this CHOICE.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
BUSN 118	MUSC 164	ACCG 210	ACCG 211
MATH 112	MUSC 194	MGMT 234	MTEC 121
MUSC 163	MUSC 253	MTEC 120	MUSC 241
MUSC 193	Lim. Ch. 1	MUSC 240	MUSC 254
WRIT 127	Lim. Ch. 1	Lim. Ch. 2	MUSC 297
Lim. Ch. 2	Lim. Ch. 2	Lim. Ch. 3	Lim. Ch. 2
Lim. Ch. 3	Lim. Ch. 3		Lim. Ch. 3

SACRED MUSIC CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 0835 (Effective Fall 2001–Summer 2006)

The Certificate program in Sacred Music is designed for those individuals interested in or already practicing music at their place of worship, and who wish to further develop their basic musical skills. Emphasis is on integrating fundamental knowledge of music theory and keyboard with stylistic and practical skills generally required of sacred musicians. Course work also includes private performance studies (typically in organ, piano, voice, or guitar), religious studies, and ensemble experience.

This is a selective admissions program. In order to be considered as a candidate for this program, students must meet basic admission requirements beyond those required for admission to the college.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

INFORMATION

Contact the Humanities and Performing Arts Department, Arts and Sciences Building, Room 255, telephone number (517) 483-1018 or the LCC Admissions Office, Room 2300, Gannon Vocational-Technical Center, telephone number (517) 483-1254.

REQUIREMENTS

TOTAL: 24 CREDITS

CODE	TITLE	CREDIT HOURS
MUSC 138	Class Piano Major I	2
MUSC 139	Class Piano Major II	2
MUSC 157	Applied Lesson I	2
MUSC 158	Applied Lesson II	2
MUSC 163	Aural Skills I	1
MUSC 164	Aural Skills II	1
MUSC 193	Basic Musicianship I	3
MUSC 194	Basic Musicianship II	3
MUSC 221	Sacred Music: History & Styles	2
MUSC 222	Techniques in Sacred Music	2
RELG 212	World Religions II	4

LIMITED CHOICE REQUIREMENTS

TOTAL: 8–14 CREDITS

Complete the indicated number of credits from *each* CHOICE listed below.

Choice 1:	Ensemble (See Note 1)	2 Credits
MUSC 108	Concert Choir	1
Choice 2:	Applied Skills (See Note 2)	3–6 Credits
MUSC 155	Class Voice Commercial I	2
MUSC 156	Class Voice Commercial II	2
MUSC 182	Class Voice I	1
MUSC 183	Class Voice II	1
MUSC 188	Class Guitar	1
MUSC 270	Rock Guitar	1
MUSC 280	Private Composition	1
MUSC 297	Synthesizers & Computer Music	2
Choice 3	Religion	4 Credits
RELG 211	World Religions I	4
RELG 241	Old Testament Literature	4
RELG 242	New Testament Literature	4

MINIMUM TOTAL

32

NOTES:

- Another Ensemble may be substituted given the student's own performance venues in Sacred Music, but only with Departmental approval.
- Typically, practitioners of Sacred Music will take Private Lessons in either Keyboard (piano or organ), Voice, or Guitar. Students are advised to explore performance/expressive avenues outside their chosen Private Lessons in selected areas of Applied Skills.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
MUSC 157	MUSC 158	MUSC 138	MUSC 139
MUSC 163	MUSC 164	Lim. Ch. 1	RELG 212
MUSC 193	MUSC 194	Lim. Ch. 2	Lim. Ch. 1
MUSC 221	MUSC 222	Lim. Ch. 3	Lim. Ch. 2
Lim. Ch. 1	Lim. Ch. 1		

**THEATRE
ASSOCIATE IN APPLIED ARTS DEGREE**

Curriculum Code: 0278 (Effective Fall 2001–Summer 2006)

Theatre at LCC is designed to provide students as many opportunities to perform as possible and to focus students towards transfer to a four-year institution. A theatre major is part of a learning community: students take classes concurrently and work with the same group of students for two years. The theatre program concentrates on improvisation: Stanislavski method of script analysis and motivation, analysis of Shakespearean text, and individual and collaborative creativity. Graduation is dependent on successful participation in a minimum of four productions. **Not all courses in this program transfer to all colleges.** Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Humanities and Performing Arts Department, Arts and Sciences Building, Room 255, telephone number (517) 483-1018.

REQUIREMENTS (See Note 1)

TOTAL: 62 CREDITS

CODE	TITLE	CREDIT HOURS
DANC 103	Jazz I	2
ENGL 122	Writing: Literature and Ideas	4
MUSC 182	Class Voice I	1
POLS 120	American Political System	4
SPCH 120	Dynamics of Communication	3
THEA 110	Introduction to Theatre	3
THEA 111	Basic Stagecraft	2
THEA 116	Scene Design I	3
THEA 120	Introduction to Acting	2
THEA 131	Studio Theatre Performance I	1
THEA 132	Studio Theatre Performance II	1
THEA 141	Acting I—Contemporary	2.5
THEA 143	Stage Voice for the Actor	3
THEA 171	Dramatic Form and Function I	3
THEA 173	Movement for the Actor	2
THEA 181	Improvisation	2.5
THEA 210	Theatre History	4
THEA 233	Studio Theatre Performance III	1
THEA 235	Studio Theatre Performance V	2
THEA 240	Acting II—Classics	2.5
THEA 241	Acting III: Creating Theatre	2.5
THEA 260	Dramatic Form and Function II	3
THEA 271	Dramatic Form and Function III	3
THEA 281	Advanced Improvisation II	1
WRIT 121	Composition I	4

LIMITED CHOICE REQUIREMENTS (See Note 2)

TOTAL: 8 CREDITS

Complete the indicated number of credits from *each CHOICE* listed below.

CHOICE 1: General Education Core Areas 4 Credits

(See the *GENERAL EDUCATION* section above)

Writing Core Area (See Note 3)	0
Speech Communication Core Area (See Note 3)	0
Science/Technology Core Area (See Note 4)	4
Global Perspectives and Diversity Core Area (See Note 5)	0
Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)	

CHOICE 2: Humanities	4 Credits
HUMS 211 History of Art I	4
HUMS 212 History of Art II	4
HUMS 213 World Civilizations I	4
HUMS 214 World Civilizations II	4

MINIMUM TOTAL 70

NOTES:

1. Students must consult a Theatre Program advisor prior to declaring a theatre major. Most required theatre courses are offered in a sequenced studio format, and students must obtain program approval to enroll.
2. Those students who plan on attending a four-year school in Michigan should include an additional 4-credit course in: 1) Science or Mathematics and 2) Social Science or Humanities to complete all general education requirements.
3. Students completing *REQUIREMENTS* have fulfilled the requirements for this Core area.
4. ASTR 201 or BIOL 210 is recommended.
5. Students completing "Limited Choice Requirements" have fulfilled the requirements for this Core area.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
MUSC 182	ENGL 122	DANC 103	SPCH 120
THEA 110	POLS 120	THEA 116	THEA 235
THEA 120	THEA 111	THEA 210	THEA 241
THEA 131	THEA 132	THEA 233	THEA 271
THEA 141	THEA 143	THEA 240	THEA 281
THEA 171	THEA 173	THEA 260	
WRIT 121	THEA 181	Lim. Ch. 2	
	Lim. Ch. 1		

STUDENTS ARE RESPONSIBLE FOR COMPLETING ALL REQUIREMENTS AS STATED. THE ONLY OFFICIAL DOCUMENTATION OF PROGRAM COMPLETION STATUS IS AN AUDIT CONDUCTED BY THE REGISTRAR'S OFFICE THAT IS INITIATED WHEN STUDENTS APPLY FOR A DEGREE OR CERTIFICATE. STUDENTS ARE EXPECTED TO APPLY ONE SEMESTER PRIOR TO THE SEMESTER THEY INTEND TO GRADUATE.

**PHOTOGRAPHIC IMAGING
ASSOCIATE IN APPLIED SCIENCE DEGREE**

Curriculum Code: 0277 (Effective Fall 2001–Summer 2006)

The field of photography is vast and diverse with a wide range of employment opportunities. Professionals include everyone from the traditional person with a camera, to a lab or service bureau employee, to someone working at a high-end computer station. Skill requirements fall into two categories, visual and technical. Visual skills include idea development, composition, lighting, and communication. Technical skills include practical and theoretical knowledge of cameras and other photographic-related equipment, light sensitive materials, processes, and digital-based imaging equipment and software. A "photographer" may be self-employed, be a member of a small team, or be employed by a large company.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Photographic Imaging Technology Program, Photography Center, Room 117, telephone number (517) 483-1673.

REQUIREMENTS

TOTAL: 44 CREDITS

CODE	TITLE	CREDIT HOURS
ARTS 171	Computer Graphics/Photography	3
IMAG 111	Intro to Photographic Tech I	4
IMAG 112	Design for imaging Tech	3
IMAG 113	Lighting Concepts/Applications	3
IMAG 114	Intro Photographic Color Tech	3
IMAG 117	Intro to Photographic Tech II	4
IMAG 119	Intermediate Lighting	4
IMAG 210	Intermediate Color Ap and Tech	3
IMAG 211	Advanced Color Appl and Tech	4
IMAG 212	Large Format Photography	2
IMAG 213	Portrait Photography	2
IMAG 214	Photojournalism	2
IMAG 215	Photo imagine Technolog	2
IMAG 233	The Business of Photography	2
IMAG 234	Portfolio Assembly/Degree Comp (See Note 1)	3

LIMITED CHOICE REQUIREMENTS

TOTAL: 16 CREDITS

Complete the indicated number of credits from *each CHOICE* listed below.

CHOICE 1: General Education Core Areas 9 Credits

(See the *GENERAL EDUCATION* section above)

Writing Core Area	3
Speech Communication Core Area	3
Science/Technology Core Area (See Note 2)	0
Global Perspectives and Diversity Core Area	3
Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)	3

CHOICE 2: Special Interest 7 Credits

ARTS 228	Advanced Digital Imaging	3
FILM 118	Film Production I	4
IMAG 191	Photo Imaging Special Topics	1
IMAG 192	Photo Imaging Special Topics	2
IMAG 193	Photo Imaging Special Topics	3
IMAG 228	Independent Study	3
IMAG 229	Advanced Imaging Applications	1
IMAG 238	Project Lab Independent Study	3
IMAG 240	Internship	4

MINIMUM TOTAL 60

NOTES:

- The Portfolio is considered to be the final course in this curriculum. All imaging and non-photo courses must be completed or be taken concurrently with IMAG 234.
- For students completing all requirements for this program (including IMAG 114), the Science/Technology Core Area requirement is waived.
- Students completing this curriculum have the option of doing so through a two-year, full-time sequence of courses or through part-time enrollment over a longer period. The full-time sequence begins most efficiently in the Fall Semester. Part-time students may begin their studies any semester.
- For graduation, a student must have earned a minimum actual grade of 2.0 in all courses taken to satisfy the course credits required in this curriculum.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
IMAG 111	IMAG 114	ARTS 171	IMAG 211
IMAG 112	IMAG 117	IMAG 210	IMAG 215
IMAG 113	IMAG 119	IMAG 212	IMAG 233
Lim. Ch. 1	Lim. Ch. 1	IMAG 213	IMAG 234
Lim. Ch. 1		IMAG 214	Lim. Ch. 2
		Lim. Ch. 2	

**PHOTOGRAPHY
CERTIFICATE OF COMPLETION**

Curriculum Code: 0963 (Effective Fall 2001–Summer 2006)

This certificate program is designed to provide students with the necessary technical knowledge and skills needed to qualify for entry level photographic support positions. All of the course work may be applied toward the Photographic Imaging Technology Associate in Applied Science Degree.

REQUIREMENTS

TOTAL: 27 CREDITS

CODE	TITLE	CREDIT HOURS
ARTS 171	Computer Graphics/Photography	3
IMAG 111	Intro to Photographic Tech I	4
IMAG 112	Design for Imaging Tech	3
IMAG 113	Lighting Concepts/Applications	3
IMAG 114	Intro Photographic Color Tech	3
IMAG 117	Intro to Photographic Tech II	4
IMAG 119	Intermediate Lighting	4
IMAG 210	Intermediate Color Ap and Tech	3

MINIMUM TOTAL

27

NOTES:

- Students may be required to purchase additional supplies, materials, and/or equipment not covered by course fees.

SUGGESTED COURSE SEQUENCE

I	II	III
IMAG 111	IMAG 114	ARTS 171
IMAG 112	IMAG 117	IMAG 210
IMAG 113	IMAG 119	

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**REAL ESTATE
ASSOCIATE IN BUSINESS DEGREE**

Curriculum Code: D130 (Effective Fall 2001–Summer 2006)

Real estate agents rent, buy, and sell property for clients on a commission basis. Agents may study property listings to learn about what is for sale; keep informed of property values, market conditions and mortgage options; find prospects and develop leads and referrals; interview prospective clients to solicit listings; show property sites; draw up listings and contracts; negotiate loans on property; prepare marketing plans using advertising strategies such as open houses; and assist clients with available mortgage options.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. To fulfill the **mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Business Careers Department, Old Central Building, Room 210, telephone number (517) 483-1522.

REQUIREMENTS

TOTAL: 39 CREDITS

CODE	TITLE	CREDIT HOURS
CISB 200	Info Sys Tech/Problem Solving	3
MGMT 234	Diversity in the Workplace	3
MKTG 119	Mktg/Manage Your Profess Image	3
MKTG 120	Sales	3
MKTG 200	Principles of Marketing	3
REAL 273	Real Estate Investment	3
REAL 274	Real Estate License Exam	3
REAL 275	Real Estate Financing	3
REAL 277	Property Management	3
REAL 279	Residential Appraisal	3
REAL 280	Real Estate Law	3
SPCH 110	Oral Communic in the Workplace	3
WRIT 127	Business Writing	3

LIMITED CHOICE REQUIREMENTS

TOTAL: 21–23 CREDITS

Complete the indicated number of credits from *each* CHOICE listed below.

CHOICE 1: General Education Core Areas 0 Credits

- (See the *GENERAL EDUCATION* section above)
- Writing Core Area (See Note 1) 0
- Speech Communication Core Area (See Note 1) 0
- Science/Technology Core Area (See Note 1) 0
- Global Perspectives and Diversity Core Area (See Note 1) 0
- Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)

CHOICE 2: Accounting 3–4 Credits

- ACCG 100 Practical Accounting Non-Major 3
- ACCG 101 Accounting Info for Management 3
- ACCG 210 Principles of Accounting I 4

CHOICE 3: Real Estate Related (See Note 2) 14 Credits

- ARCH 100 Intro to Architecture Drafting 3
- BLDT 100 Introduction to Construction 3
- BUSN 118 Introduction to Business 3
- BUSN 295 Small Business Management 3
- CIVL 120 Surveying 4
- ECON 201 Principles of Economics-Micro 3
- ECON 202 Principles of Economics-Macro 3
- LEGL 217 Busn Law III, Busn Organiza 3
- LEGL 221 Real Estate Transaction 3
- MATH 117 Math for Business 4
- MGMT 225 Principles of Management 3
- MGMT 228 Organizational Behavior 3
- MGMT 239 Time Management 3
- MKTG 140 Introduction to Advertising 3
- MKTG 210 Marketing on the Internet 3
- MKTG 229 Public Relations 2
- REAL 271 Introduction to Real Estate 2

CHOICE 4: Computer Related (See Note 3) 4–5 Credits

MINIMUM TOTAL

50

NOTES:

1. Students completing *REQUIREMENTS* have fulfilled the requirements for this Core area.
2. Students should confer with a Business Careers program advisor to assure that selection of Limited Choice courses will best fit their career plans.
3. Choose CABS-prefix courses of 110 or above.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
MKTG 119	MKTG 120	MKTG 200	CISB 200
REAL 274	REAL 275	REAL 273	MGMT 234
SPCH 110	REAL 280	REAL 279	REAL 277
WRIT 127	Lim.Ch.	Lim.Ch.	Lim.Ch.
Lim.Ch.	Lim.Ch.	Lim.Ch.	Lim.Ch.

**REAL ESTATE
CERTIFICATE OF COMPLETION**

Curriculum Code: 0148 (Effective Fall 2001–Summer 2006)

Certificate holders may improve their opportunities for advancement in this or a related area. Additional education enhances an individual's employment opportunities.

REQUIREMENTS

TOTAL: 15 CREDITS

CODE	TITLE	CREDIT HOURS
MKTG 120	Sales	3
REAL 273	Real Estate Investment	3
REAL 275	Real Estate Financing	3
REAL 279	Residential Appraisal	3
REAL 280	Real Estate Law	3

LIMITED CHOICE REQUIREMENTS

TOTAL: 5–6 CREDITS

Complete the indicated number of credits from *each* CHOICE listed below.

CHOICE 1: Real Estate Basics 5–6 Credits

- MKTG 119 Mktg/Manage Your Profess Image 3
- REAL 271 Introduction to Real Estate 2
- REAL 274 Real Estate License Exam 3
- REAL 277 Property Management 3

MINIMUM TOTAL

20

SUGGESTED COURSE SEQUENCE

I	II
MKTG 120	REAL 275
REAL 273	REAL 280
REAL 279	Lim.Ch.
Lim.Ch.	

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**CHEMICAL PROCESS TECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE DEGREE**

Curriculum Code: 0859 (Effective Fall 2001-Summer 2006)

Chemical Process Technologists are trained for employment as process operators in the chemical and related industries. Process operators are required to maintain safety, health and environmental standards in the plant; handle, store and transport chemicals; operate, monitor and control continuous and batch processes; and participate in routine and preventative maintenance of equipment and instrumentation.

Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Science Department, Arts and Sciences Building, Room 408, telephone number (517) 483-1092.

REQUIREMENTS**TOTAL: 48 CREDITS**

CODE	TITLE	CREDIT HOURS
CHEM 151	General Chemistry Lecture I	4
CHEM 152	General Chemistry Lecture II	3
CHEM 161	General Chemistry Lab I	1
CHEM 162	General Chemistry Lab II	1
CHEM 182	Introductory Organic Chemistry	3
CHEM 192	Intro Organic Chemistry Lab	1
CHEM 211	Chemical Process Technology I	4
CPSC 120	Introduction to Computers	3
ENVR 131	Industrial Process Safety	3
FIRE 220	Hazardous Materials/Fire Ser	4
MATH 121	College Algebra I	4
PHYS 200	Applied Physics	4
SOCL 120	Introduction to Sociology	4
SPCH 110	Oral Communic in the Workplace	3
STAT 170	Introduction to Statistics	3
WRIT 124	Technical Writing	3

LIMITED CHOICE REQUIREMENTS**TOTAL: 0 CREDITS**

Complete the indicated number of credits from *each CHOICE* listed below.

CHOICE 1: General Education Core Areas 0 Credits

(See the *GENERAL EDUCATION* section above)

Writing Core Area (See Note 1)	0
Speech Communication Core Area (See Note 1)	0
Science/Technology Core Area (See Note 1)	0
Global Perspectives and Diversity Core Area (See Note 1)	0
Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)	

ELECTIVES**TOTAL: 13 CREDITS**

Students must take at least 13 credits of electives. The following are recommended:

CHEM 262	Quantitative Analysis	2
ENVR 121	Environmental Rules and Regs	3
ENVR 122	Enviro Sampl & Instrumentation	4
ELTE 100	Electrical Safety Practices	1
ELTE 110	Practical Electricity	3
MACH 135	Metallurgy and Heat Treat	4
MFGM 101	Industrial Hydraulics	4
MFGM 102	Industrial Pneumatics	3
SCIN 287	Science Technology Internship	4

MINIMUM TOTAL**61****NOTE:**

- Students completing *REQUIREMENTS* have fulfilled the requirements for this Core area.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
CHEM 151	CHEM 152	PHYS 200	CHEM 182
CHEM 161	CHEM 162	SPCH 110	CHEM 192
CPSC 120	FIRE 220	Elective	CHEM 211
MATH 121	SOCL 120		ENVR 131
WRIT 124	Elective		Elective

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**CHEMICAL PROCESS TECHNOLOGY
CERTIFICATE OF ACHIEVEMENT**

Curriculum Code: 0860 (Effective Fall 2001–Summer 2006)

This program will qualify students for immediate employment in the chemical or chemical-related industries as chemical process technicians. In this capacity, employees are involved in the direct manufacture of products—monitoring, calibrating and maintaining equipment used in the production process. Additionally, they would practice quality assurance standards, environmental regulations, and safety procedures. Students may also elect to apply their certificate credits toward a two-year associates degree in this area.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

INFORMATION

Contact the Science Department, Arts and Sciences Building, Room 408, telephone number (517) 483-1092.

REQUIREMENTS
TOTAL: 23 CREDITS

CODE	TITLE	CREDIT HOURS
CHEM 125	Basic Chemistry	4
CHEM 161	General Chemistry Lab I	1
CHEM 182	Introductory Organic Chemistry	3
CHEM 192	Intro Organic Chemistry Lab	1
PHYS 200	Applied Physics	4
QUAL 100	Intro Quality Assurance	4
SPCH 110	Oral Communic in the Workplace	3
WRIT 124	Technical Writing	3

LIMITED CHOICE REQUIREMENTS
TOTAL: 10–11 CREDITS

Complete the indicated number of credits from *each* CHOICE listed below.

CHOICE 1:	Computer Science	3 Credits
CNCP 101	PC Applications for Technology	3
CPSC 120	Introduction to Computers	3

CHOICE 2:	Mathematics (Choose 1 Subchoice)	7–8 Credits
Subchoice 2A:		
MATH 112	Intermediate Algebra	4
QUAL 103	Probability/Stats Qual Assur	4
Subchoice 2B:		
MATH 121	College Algebra I	4
STAT 170	Introduction to Statistics	3

MINIMUM TOTAL **33**

NOTE:

1. A minimum grade of 2.0 is required in MATH 112, PHYS 200, and CHEM 182 and a minimum grade of 3.0 in CHEM 125.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II
CHEM 125	CHEM 182
CHEM 161	CHEM 192
QUAL 100	PHYS 200
Lim. Ch. 1	SPCH 110
Lim. Ch. 2	WRIT 124
	Lim. Ch. 2

STUDENTS ARE RESPONSIBLE FOR COMPLETING ALL REQUIREMENTS AS STATED. THE ONLY OFFICIAL DOCUMENTATION OF PROGRAM COMPLETION STATUS IS AN AUDIT CONDUCTED BY THE REGISTRAR'S OFFICE THAT IS INITIATED WHEN STUDENTS APPLY FOR A DEGREE OR CERTIFICATE. STUDENTS ARE EXPECTED TO APPLY ONE SEMESTER PRIOR TO THE SEMESTER THEY INTEND TO GRADUATE.

**CHEMICAL TECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE DEGREE**

Curriculum Code: 0163 (Effective Fall 2001–Summer 2006)

Graduates with associate degrees in Chemical Technology are much in demand by the chemical industry. This program prepares students to work with chemists and chemical engineers in many settings. Research, development, and production of pharmaceuticals, agricultural chemicals, and plastics as well as related functions such as sales and technical writing are some of the opportunities that are available to persons with this type of training. **Not all courses in this program transfer to all colleges.** Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Science Department, Arts and Sciences Building, Room 408, telephone number (517) 483-1092.

REQUIREMENTS**TOTAL: 55 CREDITS**

CODE	TITLE	CREDIT HOURS
CHEM 151	General Chemistry Lecture I	4
CHEM 152	General Chemistry Lecture II	3
CHEM 161	General Chemistry Lab I	1
CHEM 162	General Chemistry Lab II	1
CHEM 251	Organic Chemistry Lecture I	4
CHEM 252	Organic Chemistry Lecture II	4
CHEM 262	Quantitative Analysis	2
CHEM 272	Organic Chemistry Laboratory	2
CPSC 120	Introduction to Computers	3
FIRE 220	Hazardous Materials/Fire Ser	4
MATH 126	College Algebra and Trig	5
PHYS 201	Introductory Physics I	4
SOCL 120	Introduction to Sociology	4
SPCH 120	Dynamics of Communication	3
STAT 170	Introduction to Statistics	3
WRIT 121	Composition I	4
WRIT 122	Composition II	4

LIMITED CHOICE REQUIREMENTS**TOTAL: 10-12 CREDITS**

Complete the indicated number of credits from *each* CHOICE listed below.

CHOICE 1: General Education Core Areas (See Note 1) 0 Credits
(See the *GENERAL EDUCATION* section above)

Writing Core Area	0
Speech Communication Core Area	0
Science/Technology Core Area	0
Global Perspectives and Diversity Core Area	0
Mathematics Competency	0

CHOICE 2: Science Electives 10-12 Credits

BIOL 127	Cell Biology	4
CHEM 211	Chemical Process Technology I	4
ENVR 121	Environmental Rules and Regs	3
ENVR 122	Enviro Sampl & Instrumentation	4
ENVR 131	Industrial Process Safety	3
PHYS 202	Introductory Physics II	4
PHYS 225	Physics I Laboratory	1
PHYS 226	Physics II Laboratory	1
SCIN 287	Science Technology Internship	4

MINIMUM TOTAL 65

NOTE:

- Students completing *REQUIREMENTS* have fulfilled the requirements for these Core areas.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
CHEM 151	CHEM 152	CHEM 251	CHEM 252
CHEM 161	CHEM 162	CHEM 262	CHEM 272
MATH 126	CPSC 120	PHYS 201	FIRE 220
SPCH 120	STAT 170	SOCL 120	Lim. Ch. 2
WRIT 121	WRIT 122	Lim. Ch. 2	Lim. Ch. 2

STUDENTS ARE RESPONSIBLE FOR COMPLETING ALL REQUIREMENTS AS STATED. THE ONLY OFFICIAL DOCUMENTATION OF PROGRAM COMPLETION STATUS IS AN AUDIT CONDUCTED BY THE REGISTRAR'S OFFICE THAT IS INITIATED WHEN STUDENTS APPLY FOR A DEGREE OR CERTIFICATE. STUDENTS ARE EXPECTED TO APPLY ONE SEMESTER PRIOR TO THE SEMESTER THEY INTEND TO GRADUATE.

**ENVIRONMENTAL TECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE DEGREE**

Curriculum Code: 0793 (Effective Fall 2001–Summer 2006)

Environmental Technicians may work for environmental/engineering consulting firms, local or state regulatory agencies, manufacturers, recycling and waste management companies and local utility and public service (works) departments. They perform tasks such as environmental sample collection and monitoring, instrument calibration, report writing and data management. Environmental Technicians may help clients comply with governmental environmental standards, assist in field investigations, work as a team member on a waste or contamination site. They use computer skills to work with environmental data as well as the concepts of chemistry, biology, meteorology, geology and hydrology to help professionals determine the movement and effects of environmental contaminants. **Not all courses in this program transfer to all colleges.** Students planning to transfer should see an academic advisor before enrolling in any course.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Science Department, Arts and Sciences Building, Room 408, telephone number (517) 483-1092.

REQUIREMENTS

TOTAL: 45 CREDITS

CODE	TITLE	CREDIT HOURS
BIOL 210	Natural Resource Conservation	4
CHEM 151	General Chemistry Lecture I	4
CHEM 161	General Chemistry Lab I	1
CHEM 182	Introductory Organic Chemistry	3
CHEM 192	Intro Organic Chemistry Lab	1
CPSC 120	Introduction to Computers	3
ENVR 121	Environmental Rules and Regs	3
ENVR 122	Enviro Sampl & Instrumentation	4
ENVR 131	Industrial Process Safety	3
FIRE 220	Hazardous Materials/Fire Ser	4
GEOL 230	Environmental Geology	4
MATH 121	College Algebra I	4
SPCH 120	Dynamics of Communication	3
WRIT 121	Composition I	4

LIMITED CHOICE REQUIREMENTS

TOTAL: 20-24 CREDITS

Complete the indicated number of credits from *each CHOICE* listed below.

CHOICE 1: General Education Core Areas 3-4 Credits

(See the *GENERAL EDUCATION* section above)

Writing Core Area (See Note 1)	0
Speech Communication Core Area (See Note 1)	0
Science/Technology Core Area (See Note 1)	0
Global Perspectives and Diversity Core Area (See Note 2)	3-4
Mathematics Competency (See Note 1)	

CHOICE 2: Environmentally Related Courses 17-20 Credits

BIOL 203	Microbiology	3
BIOL 204	Microbiology Laboratory	1
CIVL 135	Soils Technology	3
GRET 203	Beginning MicroStation	3
GRET 220	Hydrological Systems	3
GRET 255	Beginning ARC/info	3
POLS 120	American Political System	4
SCIN 287	Science Technology Internship	4
STAT 170	Introduction to Statistics	3

MINIMUM TOTAL 65

NOTES:

1. Students completing *REQUIREMENTS* have fulfilled the requirements for this Core area.
2. Students who plan to transfer to a 4 year institution should choose a 4 credit course in order to help meet the MACRAO requirements.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
BIOL 210	CHEM 182	ENVR 122	ENVR 121
CHEM 151	CHEM 192	GEOL 230	ENVR 131
CHEM 161	CPSC 120	Lim. Ch. 1	SPCH 120
MATH 121	FIRE 220	Lim. Ch. 2	Lim. Ch. 2
WRIT 121	Lim. Ch. 2		Lim. Ch. 2
Lim. Ch. 2			

STUDENTS ARE RESPONSIBLE FOR COMPLETING ALL REQUIREMENTS AS STATED. THE ONLY OFFICIAL DOCUMENTATION OF PROGRAM COMPLETION STATUS IS AN AUDIT CONDUCTED BY THE REGISTRAR'S OFFICE THAT IS INITIATED WHEN STUDENTS APPLY FOR A DEGREE OR CERTIFICATE. STUDENTS ARE EXPECTED TO APPLY ONE SEMESTER PRIOR TO THE SEMESTER THEY INTEND TO GRADUATE.

**HISTOLOGIC TECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE DEGREE**

Curriculum Code: 0923 (Effective Fall 2001–Summer 2006)

Histologic Technicians work under the supervision of a pathologist to prepare tissue specimens for diagnosis. They perform gross tissue preparation and laboratory procedures to show microscopic structure. Histologic Technicians solve problems, demonstrate ethics and patient confidentiality, and use chemical safety and universal precautions. Histologic Technicians work together with laboratory personnel to provide doctors with information for making a diagnosis. To work in most laboratory facilities, Histologic Technicians must be certified by the American Society of Clinical Pathologists (ASCP). This curriculum is intended for students who have been admitted to the joint LCC/Capital Area Career Center Histologic Technology Program.

This is a selective admission program. In order to be considered as a candidate for this program, students must meet basic admission requirements beyond those required for admission to the College. Many of the courses for this program are open only to students officially admitted to the Histologic Technology Program.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics. For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Science Department, Arts and Sciences Building, Room 408, telephone number (517) 483-1092 or The Capital Area Career Center at (517) 244-1303.

REQUIREMENTS FOR ADMISSION TO THE HISTOLOGIC TECHNOLOGY PROGRAM

For current information about admission requirements, students must contact the Science Department, Arts and Sciences Building, Room 408, telephone number (517) 483-1092 or the LCC Admissions Office, Suite 2300, Gannon Vocational Technical Center, telephone number (517) 483-1254.

REQUIREMENTS

TOTAL: 35 CREDITS

CODE	TITLE	CREDIT HOURS
BIOL 127	Cell Biology	4
BIOL 201	Human Anatomy	4
CHEM 151	General Chemistry Lecture I	4
CHEM 161	General Chemistry Lab I	1
CPSC 120	Introduction to Computers	3
MATH 112	Intermediate Algebra	4
SCIS 297	Independent Study in Science	4
SOCL 120	Introduction to Sociology	4
SPCH 120	Dynamics of Communication	3
WRIT 121	Composition I	4

Completion of the accredited Capital Area Career Center Histologic Technology Program **16 Credits**
 Certification by the ASCP (see Note 1)

LIMITED CHOICE REQUIREMENTS

TOTAL: 11 CREDITS

Complete the indicated number of credits from each CHOICE listed below.

CHOICE 1: General Education Core Areas (see Note 2) (See the GENERAL EDUCATION section above)	0 Credits
Writing Core Area	0
Speech Communication Core Area	0
Science/Technology Core Area	0
Global Perspectives and Diversity Core Area	0
Mathematics Competency	0

CHOICE 2: Electives	11 Credits
BIOL 202 Human Physiology	4
BIOL 203 Microbiology	3
BIOL 204 Microbiology Lab	1
MATH 121 College Algebra I	4
SCIN 287 Science Technology Internship	4
STAT 170 Introduction to Statistics	3
WRIT 122 Composition II	4
MINIMUM TOTAL	62

NOTES:

- The specific histologic technique courses necessary to prepare for this certification must be taken at the Capital Area Career Center or, students who have prepared for the certification exam in another program may apply for "Credit For Previously Acquired Knowledge and Learning Experience." See the "Student Records" section of this catalog.
- Students completing *REQUIREMENTS* have fulfilled the requirements for these Core areas.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
SCIS 297	BIOL 127	BIOL 201	Lim. Ch.
	MATH 112	CHEM 151	Lim. Ch.
	SPCH 120	CHEM 161	Lim. Ch.
	WRIT 121	CPSC 120	
		SOCL 120	

**HISTOLOGIC TECHNICIAN
CERTIFICATE OF COMPLETION**

Curriculum Code: 0965 (Effective Fall 2001–Summer 2006)

Histologic Technicians work under the supervision of a pathologist to prepare tissue specimens for diagnosis. They perform gross tissue preparation and laboratory procedures to show microscopic structure. Histologic Technicians solve problems, demonstrate ethics and patient confidentiality, and use chemical safety and universal precautions. Histologic Technicians work together with laboratory personnel to provide doctors with information for making a diagnosis. To work in most laboratory facilities, Histologic Technicians must be certified by the American Society of Clinical Pathologists (ASCP). This curriculum is intended for students who have been admitted to the joint LCC/Ingham Intermediate Histologic Technician Certificate Program. Students receive a certificate upon completion and are eligible to take the HT Board of Registry Exam. The certificate program leads into the Associate in Applied Science Degree in Histologic Technology which students are strongly encouraged to complete for more employment options.

This is a selective admission program. In order to be considered as a candidate for this program, students must meet basic admission requirements beyond those required for admission to the College. Many of the courses for this program are open only to students officially admitted to the Histologic Technician Certificate Program.

REQUIREMENTS

TOTAL: 24 CREDITS

CODE	TITLE	CREDIT HOURS
SCIN 287	Science Technology Internship	4
SCIS 296	Directed Histotech Studies (See Note 1)	4
SCIS 297	Independent Study in Science	4

MINIMUM TOTAL 24

NOTES:

- Students must enroll in SCIS 296 four times for a total of 16 credits. For High School students enrolled in the joint LCC/Capital Area Career Center Histologic Technician Certificate Program, the SCIS 296 credits will be articulated.

SUGGESTED COURSE SEQUENCE

I	II	III	IV
SCIS 296	SCIS 296	SCIS 296	SCIS 296
			SCIS 297
V			
SCIN 287			

STUDENTS ARE RESPONSIBLE FOR COMPLETING ALL REQUIREMENTS AS STATED. THE ONLY OFFICIAL DOCUMENTATION OF PROGRAM COMPLETION STATUS IS AN AUDIT CONDUCTED BY THE REGISTRAR'S OFFICE THAT IS INITIATED WHEN STUDENTS APPLY FOR A DEGREE OR CERTIFICATE. STUDENTS ARE EXPECTED TO APPLY ONE SEMESTER PRIOR TO THE SEMESTER THEY INTEND TO GRADUATE.

**MOLECULAR BIOTECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE DEGREE**

Curriculum Code: 0212 (Effective Fall 2001–Summer 2006)

The Biotechnology program is a laboratory-intensive curriculum which emphasizes the wide-ranging applications of recombinant DNA technology (genetic engineering) including the preparation of gene libraries, Polymerase Chain Reaction, and DNA "fingerprinting". Graduates of this program will be able to work in many exciting areas of biotechnology, such as human genetic disease research, improvement of disease-resistance in plants, enhanced crop production, pharmaceutical research, biological cleanup of environmental pollution, or genome sequencing projects. Near the end of the program the Science Department will make every effort to arrange for internships in university or industrial research laboratories for students who wish to gain further experience. If you plan to transfer to a four-year school, please see an academic advisor or counselor before enrolling. Visit the biotechnology web site for further program details: www.lansing.cc.mi.us/science/molecbio

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Science Department, Arts and Sciences Building, Room 408, telephone number (517) 483-1092.

REQUIREMENTS
TOTAL: 46 CREDITS

CODE	TITLE	CREDIT HOURS
BIOL 127	Cell Biology	4
BIOL 275	Molecular Biology I (See Note 2)	4
BIOL 276	Molecular Biology II	4
CHEM 151	General Chemistry Lecture I	4
CHEM 152	General Chemistry Lecture II	3
CHEM 161	General Chemistry Lab I	1
CHEM 162	General Chemistry Lab II	1
CHEM 251	Organic Chemistry Lecture I	4
CHEM 252	Organic Chemistry Lecture II	4
CHEM 272	Organic Chemistry Laboratory	2
SOCL 120	Introduction to Sociology	4
SPCH 120	Dynamics of Communication	3
WRIT 121	Composition I	4
WRIT 122	Composition II	4

LIMITED CHOICE REQUIREMENTS
TOTAL: 15–17 CREDITS

Complete the indicated number of credits from *each CHOICE* listed below.

CHOICE 1: General Education Core Areas 0 Credits

(See the *GENERAL EDUCATION* section above)

Writing Core Area (See Note 1)	0
Speech Communication Core Area (See Note 1)	0
Science/Technology Core Area (See Note 1)	0
Global Perspectives and Diversity Core Area (See Note 1)	0
Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)	

CHOICE 2: Mathematics 4–5 Credits

MATH 121	College Algebra I	4
MATH 126	College Algebra and Trig	5

CHOICE 3: Science Electives 11–12 Credits

BIOL 128	Organismal Biology	4
BIOL 203	Microbiology	3
BIOL 204	Microbiology Laboratory	1
CHEM 211	Chemical Process Technology 1	4
CPSC 120	Introduction to Computers	3
PHYS 201	Introductory Physics I	4
SCIN 287	Science Technology Internship	4

MINIMUM TOTAL
61
NOTES:

1. Students completing *REQUIREMENTS* have fulfilled the requirements for this Core area.
2. Students are strongly urged to complete BIOL 127 and CHEM 161 before enrolling in BIOL 275.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
BIOL 127	CHEM 152	BIOL 275	BIOL 276
CHEM 151	CHEM 162	CHEM 251	CHEM 252
CHEM 161	WRIT 121	WRIT 122	CHEM 272
SPCH 120	Lim. Ch. 3	Lim. Ch. 3	SOCL 120
Lim. Ch. 2	Lim. Ch. 3		Lim. Ch. 3

STUDENTS ARE RESPONSIBLE FOR COMPLETING ALL REQUIREMENTS AS STATED. THE ONLY OFFICIAL DOCUMENTATION OF PROGRAM COMPLETION STATUS IS AN AUDIT CONDUCTED BY THE REGISTRAR'S OFFICE THAT IS INITIATED WHEN STUDENTS APPLY FOR A DEGREE OR CERTIFICATE. STUDENTS ARE EXPECTED TO APPLY ONE SEMESTER PRIOR TO THE SEMESTER THEY INTEND TO GRADUATE.

**VETERINARY TECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE DEGREE**

Curriculum Code: 0297 (Effective Fall 2001–Summer 2006)

Veterinary technicians are professionals dedicated to animal health care. They are vital members of the veterinary medical team and are trusted with diverse medical responsibilities, including animal nursing care, life support, laboratory specimen analysis, physical therapy, surgical assistance, anesthesia, dental hygiene, X-ray imaging, nutritional management, and client education. The variety in veterinary technology makes it a challenging medical career for those who enjoy working with animals and people. Career opportunities exist with veterinary hospitals, biomedical research institutions, zoological parks, and other animal care facilities.

Students interested in this curriculum must apply to the joint LCC/MSU Veterinary Technology Program. Students accepted to the Veterinary Technology Associate Degree Program at LCC must also apply to the MSU Veterinary Technology Program in the Spring. Admission is competitive. Successful applicants would start attending classes at the MSU Veterinary School the following January. Students are advised to have a strong background in biology, chemistry, algebra and computer science. Students are encouraged to actively seek experience in the veterinary clinical setting. This experience will help students form the foundation for career development, prior to enrolling in a college curriculum.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Science Department, Arts and Sciences Building, Room 408, telephone number (517) 483-1092 or the MSU Department of Veterinary Technology at (517) 353-7267.

REQUIREMENTS**TOTAL: 16 CREDITS**

CODE	TITLE	CREDIT HOURS
CHEM 151	General Chemistry Lecture I	4
CHEM 161	General Chemistry Lab I	1
BIOL 203	Microbiology	3
BIOL 204	Microbiology Laboratory	1
SPCH 120	Dynamics of Communication	3
WRIT 121	Composition I	4

LIMITED CHOICE REQUIREMENTS**TOTAL: 46–47 CREDITS**

Complete the indicated number of credits from *each CHOICE* listed below.

CHOICE 1: General Education Core Areas 3 Credits

(See the *GENERAL EDUCATION* section above)

Writing Core Area (See Note 1)	0
Speech Communication Core Area (See Note 1)	0
Science/Technology Core Area (See Note 1)	0
Global Perspectives and Diversity Core Area	3
Mathematics Competency (See Note 3)	

CHOICE 2: Math Requirement 4–5 Credits

MATH 121	College Algebra I	4
MATH 126	College Algebra and Trig	5

CHOICE 3: MSU Veterinary Medicine Courses 39 Credits

Required Veterinary Medicine courses taken at Michigan State University (See Note 2)

MINIMUM TOTAL 62

NOTES:

1. Students completing *REQUIREMENTS* have fulfilled the requirements for this Core area.
2. The specific Veterinary Medicine courses necessary to fulfill this requirement are: VM 200, VM 201, VM 300, VM 301, VM 302, VM 303, VM 304. These courses must be taken at Michigan State University.
3. Students completing "Limited Choice 2" have fulfilled the requirements for this Core area.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II
CHEM 151	BIOL 203
CHEM 161	BIOL 204
SPCH 120	Lim. Ch. 1
WRIT 121	
Lim. Ch. 2	

SIGN LANGUAGE INTERPRETER ASSOCIATE IN APPLIED ARTS DEGREE

Curriculum Code: 0282 (Effective Fall 2001–Summer 2006)

The Sign Language Interpreter is a person specially trained to facilitate communication between the deaf, hard of hearing, and hearing communities. Employment opportunities may be in educational settings, freelance, or contracted with agencies to provide interpreter services for deaf persons. State certification for interpreters is required by taking the Quality Assurance Examination as issued through the Division on Deafness in the Department of Labor for the State of Michigan. **Not all courses in this program transfer to all colleges.** Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics. For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Communication Department, Arts and Sciences Building, Room 211, telephone number (517) 483-1040.

REQUIREMENTS		TOTAL: 53 CREDITS
CODE	TITLE	CREDIT HOURS
SIGN 160	Orientation to Deafness	2
SIGN 161	American Sign Language I	3
SIGN 162	American Sign Language II	3
SIGN 163	American Sign Language III	3
SIGN 164	American Sign Language IV	3
SIGN 166	Fingerspelling	2
SIGN 167	Beginning Sign to Voice	3
SIGN 168	Expressive Manual Commun	2
SIGN 170	Creative Arts Signing	2
SIGN 176	Advanced Fingerspelling	2
SIGN 250	Deaf Culture and History	3
SIGN 260	Linguistic Principles of ASL	3
SIGN 261	Principles of Interpreting (See Note 1)	3
SIGN 262	Mock Quality Assurance (QA)	3
SIGN 263	Intermediate Sign to Voice	3
SIGN 264	Advanced Sign to Voice	3
SIGN 265	Adv Interpreting/Transliterated	3
SIGN 267	Sign Internship I	3
SIGN 268	Sign Internship II	3
SIGN 295	Indep. Study in Sign	1

LIMITED CHOICE REQUIREMENTS TOTAL: 12 CREDITS

Complete the indicated number of credits from each CHOICE listed below.

CHOICE 1: General Education Core Areas (See Note 2)	12 Credits
(See the GENERAL EDUCATION section above)	
Writing Core Area	3
Speech Communication Core Area	3
Science/Technology Core Area	3
Global Perspectives and Diversity Core Area	3
Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)	

MINIMUM TOTAL 65

NOTES:

1. An interpreter screening is required after the successful completion of SIGN 163 and SIGN 167 and prior to registering for SIGN 261.
2. Students completing REQUIREMENTS have fulfilled the requirements for these Core areas.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
SIGN 160	SIGN 162	SIGN 163	SIGN 164
SIGN 161	SIGN 166	SIGN 167	SIGN 261
Lim.Ch.1	Lim.Ch.1	SIGN 168	
Lim.Ch.1	Lim.Ch.1	SIGN 170	
		SIGN 176	

V	VI	VII
SIGN 250	SIGN 262	SIGN 260
SIGN 263	SIGN 264	SIGN 265
SIGN 267	SIGN 268	SIGN 295

SIGN LANGUAGE INTERPRETER CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 0107 (Effective Fall 2001–Summer 2006)

A Sign Language Interpreter is a person specially trained to facilitate communication between the deaf, and hearing communities. State certification for interpreters is required by taking the Quality Assurance Examination as issued through the Division on Deafness for the State of Michigan.

REQUIREMENTS		TOTAL: 34 CREDITS
CODE	TITLE	CREDIT HOURS
SIGN 160	Orientation to Deafness	2
SIGN 161	American Sign Language I	3
SIGN 162	American Sign Language II	3
SIGN 163	American Sign Language III	3
SIGN 164	American Sign Language IV	3
SIGN 166	Fingerspelling	2
SIGN 167	Beginning Sign to Voice	3
SIGN 261	Principles of Interpreting (See Note 1)	3
SIGN 262	Mock Quality Assurance (QA)	3
SIGN 263	Intermediate Sign to Voice	3
SIGN 267	Sign Internship I	3
SIGN 268	Sign Internship II	3

LIMITED CHOICE REQUIREMENTS TOTAL: 2-3 CREDITS

Complete the indicated number of credits from each CHOICE listed below.

CHOICE 1: Related Professional Courses	2-3 Credits	
SIGN 168	Expressive Manual Commun	2
SIGN 170	Creative Arts Signing	2
SIGN 176	Advanced Fingerspelling	2
SIGN 250	Deaf Culture and History	3
SIGN 260	Linguistic Principles of ASL	3
SIGN 264	Advanced Sign to Voice	3
SIGN 265	Adv Interpreting/Transliterated	3

MINIMUM TOTAL 36

NOTE:

1. An interpreter screening is required after the successful completion of SIGN 163 and SIGN 167 and prior to registering for SIGN 261.

SUGGESTED COURSE SEQUENCE

I	II	III	IV
SIGN 160	SIGN 162	SIGN 163	SIGN 164
SIGN 161	SIGN 166	SIGN 167	SIGN 261
			Lim.Ch.

V	VI
SIGN 263	SIGN 262
SIGN 267	SIGN 268

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**STAGE TECHNOLOGY
ASSOCIATE IN APPLIED ARTS DEGREE**

Curriculum Code: 0853 (Effective Fall 2001--Summer 2006)

The Stage Technology Program provides training in technical skills associated with the stage technology industry, as well as general education classes that are part of most liberal studies degrees. Students who eventually plan to study scenic design or lighting design; media technology or communications, including television and film studies; electrical or mechanical engineering; or other related fields may find the unique blend of theory and practice in the Stage Technology Program particularly helpful. Upon completion of this degree, students may choose to enter the stage technology field; or with appropriate course planning, a student may transfer to a four-year institution. **Not all courses in this program transfer to all colleges.** Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Class Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General Education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, some student may find it necessary to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Technology Careers Department, Gannon Vocational-Technical Center, Room 1380, telephone number (517) 483-1336.

REQUIREMENTS

TOTAL: 44 CREDITS

CODE	TITLE	CREDIT HOURS
ISCI 131	Integrated Science--Physical	4
MFGM 125	Rigging	2
MTEC 120	Audio Production I	4
SOCL 120	Introduction to Sociology	4
SPCH 110	Oral Communic in the Workplace	3
STEC 100	Intro to Stage Tech Industry	2
STEC 120	Stage Lighting and Electricity	3
STEC 130	Audio/Visual Technology	3
STEC 140	Theatrical Make-Up/Wardrobe	3
THEA 110	Introduction to Theatre	3
THEA 111	Basic Stagecraft	2
THEA 116	Scene Design I	3
THEA 210	Theatre History	4
WRIT 121	Composition I	4

LIMITED CHOICE REQUIREMENTS

TOTAL: 28 CREDITS

Complete the indicated number of credits from each CHOICE listed below.

CHOICE 1: General Education Core Areas 0 Credits

(See the *GENERAL EDUCATION* section above)

Writing Core Area (See Note 1)	0
Speech Communication Core Area (See Note 1)	0
Science/Technology Core Area (See Note 1)	0
Global Perspectives and Diversity Core Area (See Note 1)	0
Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)	

CHOICE 2: Humanities 0 Credits

HUMS 211	History of Art I	4
HUMS 212	History of Art II	4
HUMS 213	World Civilizations I	4
HUMS 214	World Civilizations II	4

CHOICE 3: English Composition (See Note 2) 4 Credits

CHOICE 4: Science/Mathematics (See Note 2) 4 Credits

CHOICE 5: Social Science (See Note 2) 4 Credits

CHOICE 6: Stage Technology (See Note 3) 8 Credits

MINIMUM TOTAL

72

STUDENTS ARE RESPONSIBLE FOR COMPLETING ALL REQUIREMENTS AS STATED. THE ONLY OFFICIAL DOCUMENTATION OF PROGRAM COMPLETION STATUS IS AN AUDIT CONDUCTED BY THE REGISTRAR'S OFFICE THAT IS INITIATED WHEN STUDENTS APPLY FOR A DEGREE OR CERTIFICATE. STUDENTS ARE EXPECTED TO APPLY ONE SEMESTER PRIOR TO THE SEMESTER THEY INTEND TO GRADUATE.

NOTES:

1. Students completing *REQUIREMENTS* have fulfilled the requirements for this Core area.
2. See the MACRAO Transfer Agreement in the *Transfer Information* section of this catalog for appropriate english composition, science/mathematics, and social science courses.
3. Students must take a minimum of 8 credits from one of the following areas: stage technology, electrical, media technology, welding, or theatre. Students must consult with the Stage Technology Program Advisor regarding course selection.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
ISCI 131	MTEC 120	STEC 130	MFGM 125
STEC 100	STEC 120	THEA 210	SOCL 120
THEA 110	THEA 116	Lim.Ch.	SPCH 110
THEA 111	Lim.Ch.	Lim.Ch.	STEC 140
WRIT 121	Lim.Ch.	Lim.Ch.	Lim.Ch.
			Lim.Ch.

**STAGE TECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE DEGREE**

Curriculum Code: 0971 (Effective Fall 2001–Summer 2006)

The Stage Technology Program provides training in technical skills associated with the stage technology industry. The Associate Degree in Applied Science is particularly useful for those individuals wishing to pursue advanced careers in this industry, such as management positions or permanent jobs at entertainment facilities. Students in this curriculum **MUST** be a registered apprentice in the Michigan Stage Technician Apprenticeship Program (MSTAP). **Not all courses in this program transfer to all colleges.** Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

This is a selective admission program. In order to be admitted into this program, students must meet basic admission requirements beyond those required for admission to the college. STEC 110—Stage Tech Field Experience is open only to students officially admitted to the Stage Technology Program.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

The admission and/or graduation requirements for this program may change each academic year. **The program requirements below apply only to those students who have been admitted to the program for the 2001/2002 academic year.** For the most recent and complete information, interested students should contact the Technology Careers Department, Gannon Vocational-Technical Center, Room 1380, telephone number (517) 483-1336 or the Admissions Office, Gannon Vocational-Technical Center, Room 2200, telephone number (517) 483-1254.

REQUIREMENTS FOR ADMISSION TO THE STAGE TECHNOLOGY PROGRAM FOR MSTAP APPRENTICES

For current information about admission requirements, contact the Technology Careers Department, Gannon Vocational-Technical Center, Room 1380, telephone number (517) 483-1336 or the Admissions Office, Gannon Vocational-Technical Center, Room 2200, telephone number (517) 483-1254.

REQUIREMENTS		TOTAL: 59 CREDITS
CODE	TITLE	CREDIT HOURS
ELTE 100	Electrical Safety Practices	1
ELTE 110	Practical Electricity	3
ELTE 150	Electric Motor Maintenance	2
MTEC 120	Audio Production I	4
MTEC 122	Sound Reinforcement	4
MTEC 223	Sound Reinforcement Practicum	2
MTEC 252	Lighting for Television/Video	3
STEC 100	Intro to Stage Tech Industry	2
STEC 110	Stage Tech Field Experience (See Note 1)	1
STEC 120	Stage Lighting and Electricity	3
STEC 130	Audio/Visual Technology	3
STEC 140	Theatrical Make-Up/Wardrobe	3
STEC 150	Stage and Arena Rigging	3
STEC 296	STEC Internship	2
THEA 110	Introduction to Theatre	3
THEA 111	Basic Stagecraft	2
THEA 116	Scene Design I	3
THEA 210	Theatre History	4
WELD 100	Combination Welding	4
WELD 111	Gas Tungsten ARC Welding	4

LIMITED CHOICE REQUIREMENTS TOTAL: 12 CREDITS
Complete the indicated number of credits from each CHOICE listed below.

CHOICE 1: General Education Core Areas	12 Credits
(See the GENERAL EDUCATION section above)	
Writing Core Area	3
Speech Communication Core Area	3
Science/Technology Core Area	3
Global Perspectives and Diversity Core Area	3
Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)	
MINIMUM TOTAL	71

NOTES:

- STEC 110 must be taken four times for a total of 4 credits toward this degree. Stage Technology Field Experience involves variable hours that are determined by work calls from full and associate members of the MSTAP Joint Apprentice Training Committee (JATC). Most work calls will come through IATSE Local #274.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
ELTE 100	ELTE 110	ELTE 150	MTEC 223
MTEC 120	MTEC 122	STEC 110	MTEC 252
STEC 100	STEC 110	STEC 140	STEC 110
STEC 110	STEC 120	THEA 116	STEC 150
THEA 110	STEC 130	WELD 100	THEA 210
THEA 111	Lim. Ch.	Lim. Ch.	WELD 111
v			
STEC 296			
Lim. Ch.			
Lim. Ch.			

**STAGE TECHNOLOGY
CERTIFICATE OF ACHIEVEMENT**

Curriculum Code: 0849 (Effective Fall 2001–Summer 2006)

This program consists of practical, hands-on courses that provide students with the necessary technical knowledge and skills needed for an entry-level position in the stage technology industry. Upon completion of this program, students may opt to enter the workforce, apply for the Michigan Stage Technician Apprenticeship Program, continue course work toward the Associate in Applied Arts Degree in Stage Technology, or use their skills in community service at schools, theatres, and churches.

REQUIREMENTS		TOTAL: 27 CREDITS
CODE	TITLE	CREDIT HOURS
ELTE 100	Electrical Safety Practices	1
ELTE 110	Practical Electricity	3
MFGM 125	Rigging	2
MTEC 120	Audio Production I	4
STEC 100	Intro to Stage Tech Industry	2
STEC 120	Stage Lighting and Electricity	3
STEC 130	Audio/Visual Technology	3
STEC 140	Theatrical Make-Up/Wardrobe	3
THEA 111	Basic Stagecraft	2
WELD 100	Combination Welding	4

LIMITED CHOICE REQUIREMENTS TOTAL: 10 CREDITS
Complete the indicated number of credits from each CHOICE listed below.

CHOICE 1: Stage Technology (See Note 1)	10 Credits
MINIMUM TOTAL	37

NOTE:

- Students must take a minimum of 10 credits from one of the following areas: stage technology, electrical, media technology, welding, or theatre. Students must consult with the Stage Technology Program advisor regarding course selection.

SUGGESTED COURSE SEQUENCE

I	II	III
ELTE 100	MTEC 120	MFGM 125
ELTE 110	STEC 130	STEC 140
STEC 100	THEA 111	WELD 100
STEC 120	Lim.Ch.	Lim.Ch.
		Lim.Ch.

STUDENTS ARE RESPONSIBLE FOR COMPLETING ALL REQUIREMENTS AS STATED. THE ONLY OFFICIAL DOCUMENTATION OF PROGRAM COMPLETION STATUS IS AN AUDIT CONDUCTED BY THE REGISTRAR'S OFFICE THAT IS INITIATED WHEN STUDENTS APPLY FOR A DEGREE OR CERTIFICATE. STUDENTS ARE EXPECTED TO APPLY ONE SEMESTER PRIOR TO THE SEMESTER THEY INTEND TO GRADUATE.

**CUSTOMER ENERGY SPECIALIST
CERTIFICATE OF ACHIEVEMENT**

Curriculum Code: 0893 (Effective Fall 2001--Summer 2006)

This curriculum is designed to give students the technical knowledge and customer relations skills to determine customer energy needs in the negotiation, design, installation, and application of utility facilities. Customer energy specialists are employed by utility companies, governmental agencies, heating and cooling contractors, the construction industry, and engineering and architectural firms.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

INFORMATION

Contact the Technology Careers Department, Gannon Vocational-Technical Center, Room 1380, telephone number (517) 483-1336.

REQUIREMENTS

TOTAL: 42 CREDITS

CODE	TITLE	CREDIT HOURS
ACCG 101	Accounting Info for Management	3
BUSN 118	Introduction to Business	3
CADD 101	Mechanical Drafting Basic CAD	4
CADD 131	AutoCAD Basic 2-D	4
CNCP 101	PC Applications for Technology	3
ELCT 101	Analog Problems	5
ELCT 109	DC Circuits	3
ELCT 110	AC Circuits	3
MATH 114	Technical Math I	4
MKTG 200	Principles of Marketing	3
PHYS 200	Applied Physics	4
SPCH 110	Oral Communic in the Workplace	3
MINIMUM TOTAL		42

NOTE:

- Students who are employed or interning at Consumers Energy Company will also need to complete LEGL 215 and WRIT 124 for a total of 6 credits in addition to completing this certificate of achievement curriculum.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III
BUSN 118	ACCG 101	ELCT 110
CADD 101	CADD 131	MKTG 200
CNCP 101	ELCT 109	PHYS 200
ELCT 101	MATH 114	SPCH 110

**GENERAL TECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE DEGREE**

Curriculum Code: 0213 (Effective Fall 2001--Summer 2006)

This curriculum is designed to provide an individual with a multi-discipline technical background. The technical courses and supporting courses that comprise this degree provide the flexibility to match the student's interest with the skills necessary for job entry. For example, this curriculum is often pursued by apprentices who complete most of the requirements for this degree through their related training requirements and who also wish to earn an associate degree. Students interested in pursuing careers in a specific technical area should see a faculty advisor in their career choice.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics. For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Technology Careers Department, Gannon Vocational-Technical Center, Room 1380, telephone number (517) 483-1336.

REQUIREMENTS

TOTAL: 22 CREDITS

CODE	TITLE	CREDIT HOURS
CADD 110	Industrial Blueprint Reading	3
EMTA 100	Medical First Responder	4
MACH 100	Manufacturing Processes	4
MACH 135	Metallurgy and Heat Treat	4
QUAL 100	Intro Quality Assurance	4
WRIT 124	Technical Writing	3

LIMITED CHOICE REQUIREMENTS

TOTAL: 38 CREDITS

Complete the indicated number of credits from each CHOICE listed below.

CHOICE 1: General Education Core Areas 9 Credits

(See the GENERAL EDUCATION section above)

Writing Core Area (See Note 1)	0
Speech Communication Core Area	3
Science/Technology Core Area	3
Global Perspectives and Diversity Core Area	3
Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)	

CHOICE 2: Mathematics 8 Credits

MATH 112	Intermediate Algebra	4
MATH 114	Technical Math I	4
MATH 115	Technical Math II	4

CHOICE 3: Applied Technology Related (See Note 2) 21 Credits

MINIMUM TOTAL 60

NOTES:

- Students completing REQUIREMENTS have fulfilled the requirements for this Core area.
- Contact an advisor in GVT 1360 or call (517) 483-1336 for a listing of additional courses that may be applied toward this degree.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
EMTA 100	MACH 135	CADD 110	Lim.Ch.
MACH 100	Lim.Ch.	WRIT 124	Lim.Ch.
QUAL 100	Lim.Ch.	Lim.Ch.	Lim.Ch.
Lim.Ch.	Lim.Ch.	Lim.Ch.	Lim.Ch.

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**AIRLINE OPERATIONS
CERTIFICATE OF COMPLETION**

Curriculum Code: 0918 (Effective Fall 2001–Summer 2006)

This curriculum is designed for individuals with travel experience who are interested in careers at airports or with airlines. It prepares the student with the basic skills and knowledge necessary for entry level positions as customer service representatives or flight attendants.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

INFORMATION

Contact the Business Careers Department, Old Central Building, Room 210, telephone number (517) 483-1522.

REQUIREMENTS

TOTAL: 15 CREDITS

CODE	TITLE	CREDIT HOURS
MGMT 150	Managing Customer Relations	3
SPCH 130	Fundamental of Public Speaking	3
TRVL 135	Airline/Airport Operations	3
TRVL 140	Airline Computer Reservation I	3
TRVL 180	Flight Attendant	3

MINIMUM TOTAL 15

NOTE:

1. This course does not fulfill the Speech Communication Core requirement for those students planning to pursue an associate degree.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

- MGMT 150
- SPCH 130
- TRVL 135
- TRVL 140
- TRVL 180

**TOUR CRUISE OPERATIONS
CERTIFICATE OF COMPLETION**

Curriculum Code: 0920 (Effective Fall 2001–Summer 2006)

This curriculum is designed for individuals with travel experience who are interested in careers with cruiselines or tour operators. It gives students the basic skills and knowledge for entry level positions in businesses that offer group tours, tour packages, or cruises.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

INFORMATION

Contact the Business Careers Department, Old Central Building, Room 210, telephone number (517) 483-1522.

REQUIREMENTS

TOTAL: 16 CREDITS

CODE	TITLE	CREDIT HOURS
MGMT 150	Managing Customer Relations	3
MGMT 239	Time Management	3
SPCH 130	Fundamental of Public Speaking	3
TRVL 145	Intro Cruise Sales/Ground Tran	3
TRVL 210	Group Travel/Escorting Ops	4

MINIMUM TOTAL 16

NOTE:

1. This course does not fulfill the Speech Communication Core requirement for those students planning to pursue an associate degree.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

- MGMT 150
- MGMT 239
- SPCH 130
- TRVL 145
- TRVL 210

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**TRAVEL AGENCY OPERATIONS
CERTIFICATE OF COMPLETION**

Curriculum Code: 0919 (Effective Fall 2001–Summer 2006)

This curriculum is designed to give individuals with travel experience the basic skills and knowledge necessary for an entry level position in a travel agency.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

INFORMATION

Contact the Business Careers Department, Old Central Building, Room 210, telephone number (517) 483-1522.

REQUIREMENTS**TOTAL: 17 CREDITS**

CODE	TITLE	CREDIT HOURS
CISB 102	Internet Literacy	3
MGMT 150	Managing Customer Relations	3
MGMT 239	Time Management	3
OADM 203	Professional Office Procedures	2
TRVL 100	Travel Agency Operations	3
TRVL 140	Airline Computer Reservation I	3
MINIMUM TOTAL		17

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

CISB 102
MGMT 150
MGMT 239
OADM 203
TRVL 100
TRVL 140

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**TRAVEL AND TOURISM
ASSOCIATE IN BUSINESS DEGREE**
Curriculum Code: 0229 (Effective Fall 2001–Summer 2006)

Travel agents, tour escorts, cruise line and airline personnel plan trips and arrange lodging, modes of travel, and travel services for customers. They may specialize in foreign or domestic service, individual or group travel, or a specific geographical area. Travel customer service representatives are employed by airlines, cruise lines, tour companies, railroads, and tourism bureaus to provide travel information and arrange accommodations for tourists. They answer questions, offer suggestions, verify arrival/departure times, and provide literature on trips, excursions, sports events, concerts, and plays. Travel, tour, cruise and airline personnel may confer with customers by phone or in person, or plan trips for them in response to mail requests.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. **To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.** For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Business Careers Department, Old Central Building, Room 210, telephone number (517) 483-1522.

REQUIREMENTS
TOTAL: 56 CREDITS

CODE	TITLE	CREDIT HOURS
CABS 110	Microsoft Office	3
CISB 200	Info Sys Tech/Problem Solving	3
HMFS 101	Intro Hospitality/Tourism	3
MGMT 150	Managing Customer Relations	3
MGMT 239	Time Management	3
MKTG 210	Marketing on the Internet	3
OADM 203	Professional Office Procedures	2
SPCH 110	Oral Communic in the Workplace	3
TRVL 125	Destinations I	3
TRVL 130	Destinations II	3
TRVL 131	Destinations III	3
TRVL 140	Airline Computer Reservation I	3
TRVL 145	Intro Cruise Sales/Ground Tran	3
TRVL 190	internship and Seminar	3
TRVL 200	Sales/Mktg for Travel/Tourism	3
TRVL 230	Travel/Tourism Law	3
TRVL 250	Airline Comptr Reservation II	3
TRVL 265	Fundamentals of Bus Travel	3
WRIT 127	Business Writing	3

LIMITED CHOICE REQUIREMENTS
TOTAL: 15–18 CREDITS

Complete the indicated number of credits from *each* CHOICE listed below.

CHOICE 1: General Education Core Areas 3 Credits

(See the *GENERAL EDUCATION* section above)

Writing Core Area (See Note 1)	0
Speech Communication Core Area (See Note 1)	0
Science/Technology Core Area (See Note 1)	0
Global Perspectives and Diversity Core Area	3
Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)	

CHOICE 2: Specific Travel Occupations (Choose 1 Subchoice) 12–15 Credits
Subchoice 2A: Tour/Cruise Operations

HMFS 229	Convention/Meeting Management	3
MKTG 119	Mktg/Manage Your Profess Image	3
SPCH 130	Fundamental of Public Speaking	3
TRVL 146	Seminar at Sea	2
TRVL 210	Group Travel/Escorting Ops	4

Subchoice 2B: Airline Operations

MKTG 119	Mktg/Manage Your Profess Image	3
SPCH 130	Fundamental of Public Speaking	3
TRVL 135	Airline/Airport Operations	3
TRVL 180	Flight Attendant	3

Subchoice 2C: Travel Agencies

TRVL 100	Travel Agency Operations	3
TRVL 170	Owning/Managing Trvl Agency	3
TRVL 210	Group Travel/Escorting Ops	4
TRVL 260	Travel Agency Accounting	2

MINIMUM TOTAL
71
NOTE:

- Students completing *REQUIREMENTS* have fulfilled the requirements for this Core area.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

I	II	III	IV
CABS 110	SPCH 110	CISB 200	TRVL 131
HMFS 101	TRVL 125	MKTG 210	TRVL 230
MGMT 150	TRVL 140	OADM 203	TRVL 265
MGMT 239	TRVL 145	TRVL 130	Lim.Ch.
WRIT 127	TRVL 200	TRVL 190	Lim.Ch.
Lim.Ch.	Lim.Ch.	TRVL 250	Lim.Ch.
		Lim.Ch.	

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TRUCK DRIVER TRAINING CERTIFICATE OF COMPLETION

Curriculum Code: 0262 (Effective Fall 2001–Summer 2002)

A truck driver operates a commercial vehicle that weighs over 10,000 pounds and is used in either intrastate or interstate travel. A person must be able to safely operate a large displacement vehicle in all traffic conditions. Truck drivers also need to maintain records that are required by state and federal regulations and employers. Before beginning the program, students must pass a physical and eye exam as well as have a good driving record. Students are subject to drug and alcohol testing as required by the Department of Transportation. There is limited enrollment, so there may be a short waiting period before starting the program. Upon successfully completing the program, a student will receive a certificate of completion from the college and be qualified for a class "A" Commercial Drivers License (CDL).

This is a selective admission program. In order to be considered as a candidate for this program, students must meet basic admission requirements beyond those required for admission to the college. The courses for this program are open only to students officially admitted to the Truck Driver Training Program.

PREREQUISITES

Students should see the *Course Descriptions* section of this catalog or the *Course Schedule* for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

INFORMATION

The admission and/or graduation requirements for this program may change each academic year. **The program requirements below apply only to those students who have been admitted to the program for the 2001/2002 academic year.** For the most recent and complete information, interested students should contact Lansing Community College, Truck Driver Training Program, 2417 25th Street, Augusta, MI 49012, telephone number (616) 731-4125.

REQUIREMENTS FOR ADMISSION TO THE TRUCK DRIVER TRAINING PROGRAM

Curriculum Code: 0718

In order to be considered as a candidate for this program, an applicant must meet the following admission requirements:

- Submit to the Truck Driver Training Program a completed Selective Admissions Application, a completed Truck Driver Training Application, and a \$100 deposit or letter from a sponsoring agency or approved company indicating financial responsibility for applicable tuition and fees. (This deposit is refunded upon cancellation if the College is notified at least 18 days prior to the class starting date.)
- Have a valid driver's license. A Commercial License is not necessary while attending school, but will be required prior to being hired for work. Have an acceptable driving record. All driving records are checked through the Secretary of State and reviewed individually. The school will apply for each applicant's Motor Vehicle Record which takes 10–14 days to receive.
- Must be eligible for a "Temporary Instruction Permit" (T.I.P.). The State of Michigan requires all truck drivers to have a Commercial Driver's License. Any person learning to drive a tractor-trailer unit (such as those operated by Lansing Community College) must be in possession of a T.I.P. or "Temporary Instruction Permit". **WE WILL PREPARE STUDENTS TO OBTAIN THEIR "T.I.P." DURING THE FIRST WEEK OF CLASS.** Written tests will be administered by Secretary of State personnel in the L.C.C. classroom. Persons shall be considered *ineligible* for a T.I.P. if they:
 - Fail to pass the written examination.
 - Have been charged in the 24 months immediately preceding application with a total of 12 or more points.
 - Have had their license suspended or revoked in the 36 months immediately preceding application unless that suspension or revocation was due to a revocation by temporary medical condition, failure to appear for re-exam or failure to appear in court for a traffic violation, an unsatisfied judgement or a no-fault insurance violation.
 - Have been convicted of a 6 point violation or an impaired driving charge (4 points) in the 24 months immediately preceding application.

Applicants residing outside the State of Michigan *must* supply a copy of their own driving record from the State in which they are licensed and *must* possess a T.I.P. from their licensing State.

- Be able to read, write and speak the English language. A high school diploma is not required, but students must be able to compute simple fractions and know general math for correct log book tabulation.
- Be able to pass the Department of Transportation (D.O.T.) physical examination. The physical form and card can be obtained from the LCC Truck Driver Training Program. PLEASE NOTE: THE TDT PROGRAM MUST RECEIVE THE APPLICANT'S COMPLETED D.O.T. PHYSICAL FORM SIGNED BY A PHYSICIAN BEFORE ACCEPTANCE INTO THE PROGRAM. The fee for the physical exam is the applicant's responsibility.
- Be at least 18 years old. Those persons between the ages of 18 & 21 should realize job opportunities are limited for persons in this age bracket, and they will more than likely experience difficulty in obtaining employment. Graduates must be 21 years of age to drive outside the State of Michigan.
- Be able to appear for 200 hours of instruction during the five weeks of training. Classes begin at 8:00 a.m. (Monday through Friday) and students are expected to be on time. Any student missing more than two days of class will be dismissed.
- Students are subject to drug and alcohol testing as required by D.O.T. regulations.
- The Truck Driver Training Program is a short streamlined program. Any previous driving experience along with some mechanical aptitude is beneficial to a student. **APPLICANTS SHOULD KNOW HOW TO SHIFT A STRAIGHT STICK TRANSMISSION AND USE A CLUTCH PRIOR TO ATTENDING.**

TRUCK DRIVER TRAINING PROGRAM REQUIREMENTS

Curriculum Code: 0262

REQUIREMENTS		TOTAL: 9 CREDITS
CODE	TITLE	CREDIT HOURS
TDTP 110	Truck Driver Training I	3
TDTP 111	Truck Driver Training II	3
TDTP 112	Truck Driver Training III	3
MINIMUM TOTAL		9

NOTE:

- The Program provides 140 hours in range and highway driving and 60 hours in classroom instruction situations. Range training includes an over-the-road trip of over 1,000 miles, permitting the students to gain over-the-road experience.

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TRANSFER INFORMATION

Students planning on transferring to a four-year institution should be aware that universities and colleges differ widely in the courses they accept for transfer. In order to achieve maximum transferability of courses, students should consult an academic advisor or counselor at the Counseling Services Department, Suite 2300, Gannon Vocational-Technical Center.

In addition, students intending to transfer should follow the transfer curriculum guide designed specifically for the major and the institution in which they intend to enroll. Students should understand that transfer guides are not LCC degree guides. Students intending to earn an LCC degree prior to transferring should consult an academic advisor or counselor.

Curricular guides are available for many, but not all, possible transfer programs. If there is not a curriculum guide available for a preferred major or institution, students are encouraged to contact the Admissions Office at the transfer institution of interest. It is the student's responsibility when transferring from LCC to be aware of the transfer institution's policies and program requirements.

Curriculum guides and additional transfer information may be obtained by returning the information request card attached to the back cover of this publication or by contacting: LCC Counseling Services Department, Gannon Vocational-Technical Center, Suite 2300; TEL (517) 483-1904; FAX (517) 483-1970; E-MAIL mgarrison@lansing.cc.mi.us.

When requesting information, please indicate area(s) of study and transfer college/university choice(s).

Areas of study (majors) for which transfer curriculum guides are available are:

Accountancy	Health Care Management
Accounting	Health Services Administration
Actuarial Science and Economics	Hospitality Services Administration
Advertising	Human Resources Management
Agribusiness Management	Information Systems
Agriculture and Natural Resources Communication	Integrated Supply Management
Agriscience	International
Animal Science	Logistics Management
Anthropology	Marketing
Apparel Design	Product Operation & Management
Applied Ecology & Environmental Science	Public Administration
Applied Geo-physics	Retail Management
Applied Liberal Studies	Retail Supply Chain Management
Applied Mathematics	Statistics
Applied Physics	Chemistry
Architecture	Child Development
Architectural Imaging	Chiropractic, Pre-Professional
Art	Clinical Laboratory Science
Art History	Communication
Athletic Training	Interpersonal and Public
Atmospheric, Oceanic, and Space Sciences	Scientific and Technical
Audiology and Speech Sciences	Studies
Automotive and Heavy Equipment Management	Technical and Professional
Aviation Flight Science - Pilot	Communication Arts
Aviation Maintenance Technology	Computational Mathematics
Behavioral Science	Computer Information Science
Biochemistry	Computer and Mathematical Sciences
Biological Science	Computer Information/Management
Biology	Computer Information Systems
Biopsychology	Computer Networks and Systems
Biotechnology	Computer Science
Broadcasting	Conservation
Building Construction Management	Construction Management
Business	Criminal Justice
Accounting	Criminology
Accounting Information Systems	Crop and Soil Science
Administration	Dental Hygiene
Banking	Dentistry, Pre-Professional
Business Studies	Dietetics
Economics	E-Commerce
Finance	Earth Science
Food Industry Management	Economics
Food Marketing	Education
	Elementary
	Physical

Secondary	Home Economics
Allied Health	Horticulture
Biology	Hospitality
Business	Business
Chemistry	Tourism Management
Home Economics	Human Resources
Industrial	Development
Mathematics	Management
Music	Industrial
Technical	Health and Safety
Special	Management
Engineering	Technology
Administration	Insurance
Arts	Interdisciplinary Studies
Aeronautical	Human Aging
Aerospace	Human Resources
Biomedical	Humanities
Biosystems	Public Policy
Chemical	Interior Architecture
Civil	Interior Design
Computer	International
Construction and Management	Business
Electrical	Relations
Environmental	Studies
Geological	James Madison
Industrial and Operations	Journalism
Material Science	Kinesiology
Mechanical	Landscape Architecture
Metallurgical	Law
Mining	Pre-Professional
Naval Architecture & Marine	Legal Assistant
Nuclear	Liberal Arts
Paper	Management
Physics	Environmental Health & Safety
Surveying	Health and Fitness
Engineering Technology	Health Care
Automated Manufacturing	Information Systems
Automotive	Organizational Development
Electrical/Electronics	Public Safety
Heating, Ventilation, Air Condition and Refrigeration	Technical
Heavy Equipment Service	Marketing
Manufacturing	Mathematical Sciences
Product Design	Mathematics
Welding	Mechanics
English	Media Production
Environmental & Applications Studies	Medical Assistant Program
Environmental Chemistry	Medical Laboratory Sciences
Environmental Science	Medical, Pre-Professional
Environmental Technology	Medical Record Administration
Exercise and Sport Science	Medical Technology
Facilities Management	Merchandising Management
Family Consumer Resources	Modern Languages
Family Community Services	Music
Family Life Education	Natural Resources
Family Studies	Nursing
Film & Video Studies	Nutritional Sciences
Fire Science General Emphasis	Occupational Safety & Health
Fisheries and Wildlife Management	Occupational Therapy
Food	Optometry, Pre-Professional
Industry Management	Packaging
Science	Park, Recreation, and Tourism
Service Administration	Resources
Forestry	Pharmacy, Pre-Professional
Geography	Philosophy
Geological Sciences	Photography
Geology	Physical Therapy
Health	Physician Assistant
Fitness in Prevent & Rehab Program	Physics
Science	Planning
Services Administration	Podiatry, Pre-Professional
	Political Science
	Polymers and Coatings Technology

Printing Management/Marketing	Sports Medicine
Psychology	Sports Science
Public & Nonprofit Administration	Surveying
Public Relations	Systems Analysis and Application Development
Public Resource Management	Telecommunication
Quality Management	Television Production
Radiation Therapy Technology	Textile and Apparel Studies
Recreation	Design & Development Merchandising
Recreational Management	Theater
Social Science	Therapeutic Recreation
Social Work	Urban and Regional Planning
Sociology	Veterinary Medicine
Speech	Water Purification Tech
Communication	
Pathology and Audiology	

Colleges/universities for which transfer curricular guides are available are as follows (not all majors listed above are available at all transfer institutions):

Alma College	Michigan Technological University
Aquinas College	Morehouse University
Baker College	Morris Brown College
Bay de Noc Community College	National University of Health Sciences
Brooks Institute	Northern Michigan University
Calvin College	Northwood University
Clark Atlanta University	Oakland University
Center for Creative Studies	Olivet College
Central Michigan University	Palmer College of Chiropractic
Cleary College	Saginaw Valley State University
Concordia College	School of the Art Institute of Chicago
Davenport University/Lansing	Sherman College of Straight Chiropractic
Eastern Michigan University	Spelman University
Ferris State University	Spring Arbor University
Franklin University	Thomas M. Cooley Law School
Grand Rapids Community College	Tri-State University
Grand Valley State University	University of Detroit Mercy
Johnson and Wales University	University of Michigan/Ann Arbor
Kendall College of Art and Design	University of Michigan/Dearborn
Kettering University (formerly GMI)	University of Michigan/Flint
Lake Superior State University	Walsh College
Lawrence Technological University	Wayne State University
Life Chiropractic College	Western Michigan University
Michigan State University	William Tyndale College

MACRAO TRANSFER AGREEMENT

In 1973 the Michigan Association of Collegiate Registrars and Admissions Officers proposed the MACRAO Transfer Agreement. The MACRAO Transfer Agreement was created to simplify the transfer of students from two-year to four-year institutions. The agreement stipulates that 30 semester credit hours of 100-level and above, compatible, general course work will be granted to smooth transferability to participating universities. These credits will be applied toward a student's general education requirements. Completion of requirements for the MACRAO Transfer Agreement does not necessarily mean that a student has completed the requirements for a specific Lansing Community College associate degree.

The basic two-year requirements are:

English Composition	6 semester hours minimum
Science and Mathematics	8 semester hours minimum
Social Science	8 semester hours minimum
Humanities	8 semester hours minimum

The following establishes the approved list of LCC courses under the four major distribution requirements for the MACRAO Transfer Agreement. A course can be used to satisfy only one category even though it may appear in more than one category. Only courses in which at least a 2.0 is received may be applied to this agreement.

I English Composition (minimum of six (6) semester credit hours)

Any one from each group

1. WRIT 121 or WRIT 131
2. WRIT 122 or ENGL 122 or WRIT 132 or ENGL 132

A student with waiver of WRIT 121 indicated on the transcript must elect a second course from the 200-level offerings in WRIT or ENGL. Waiver of WRIT 121 should be printed on the student's transcript.

NOTE: Areas below have 3-credit semester courses, and taking these courses may necessitate taking 3 courses to reach the 8 semester credit hour minimum.

II. Science and Mathematics (minimum of eight (8) semester credit hours)
Choose courses in at least two (2) subject areas, with a minimum of one laboratory science course. *Underlined courses indicate a laboratory course.*

Biological Science: BIOL 120, 121, 127, 128, 145, 201, 202, 203 and 204, 210, 260, 265; ISCI 122; PFHW 123

Mathematics and Statistics: MATH 121, 122, 126, 128, 130, 141, 151, 152, 201, 202; STAT 170, 215. (Note: MSU does not accept Math/Stat courses for the science requirement.)

Physical Science: ASTR 201; CHEM 120, 125, 135, 151 and 161; GEOL 221, 222, 230; ISCI 121, 131; METR 220, PHYS 201 and 225, 215 and 225

III. Social Science (minimum of eight (8) semester credit hours)

Choose courses in at least two (2) subject areas.

Economics: ECON 120, 201, 202, 213

Geography: GEOG 120, 200, 202

Political Science: POLS 120, 121, 260, 270

Psychology: CHDV 101; CJUS 255; PSYC 200, 202, 203, 205, 250

Sociology/Anthropology: ANTH 270; CJUS 101,102, 106; GERO 100, SOCL 120, 254, 255, 260, SOWK 101

IV. Humanities (minimum of eight (8) semester credit hours)

Take one of the following combinations:

- HIST 211 and 212 *or* 214; HUMS 211 and 212; HUMS 213 and 214; ENGL 211 and 212; PHIL 211 and 212; RELG 211 and 212

OR

- Take courses in at least two (2) of the following areas:

Art History: HUMS 120, 211, 212

Foreign Language: FREN 121, 122, 201, 202; GRMN 121, 122, 201, 202; JAPN 121, 122, 201, 202; SPAN 121, 122, 201, 202. (Note: MSU does not accept Foreign Language courses for the Humanities requirement.)

History: ECON 213; HIST 150, 210, 211, 212, 214, 220, 230, 260

Humanities: HIST 240, 250; HUMS 160, 213, 214, 215

Literature: ENGL 201, 202, 203, 208, 211, 212, 255, 256, 260, 266, 267, 270, 290

Performing Arts: MUSC 199, 240, 241; THEA 210

Philosophy: PHIL 151, 152, 153, 211, 212, 260

Religion: RELG 211, 212, 241, 242, 250

NOTES

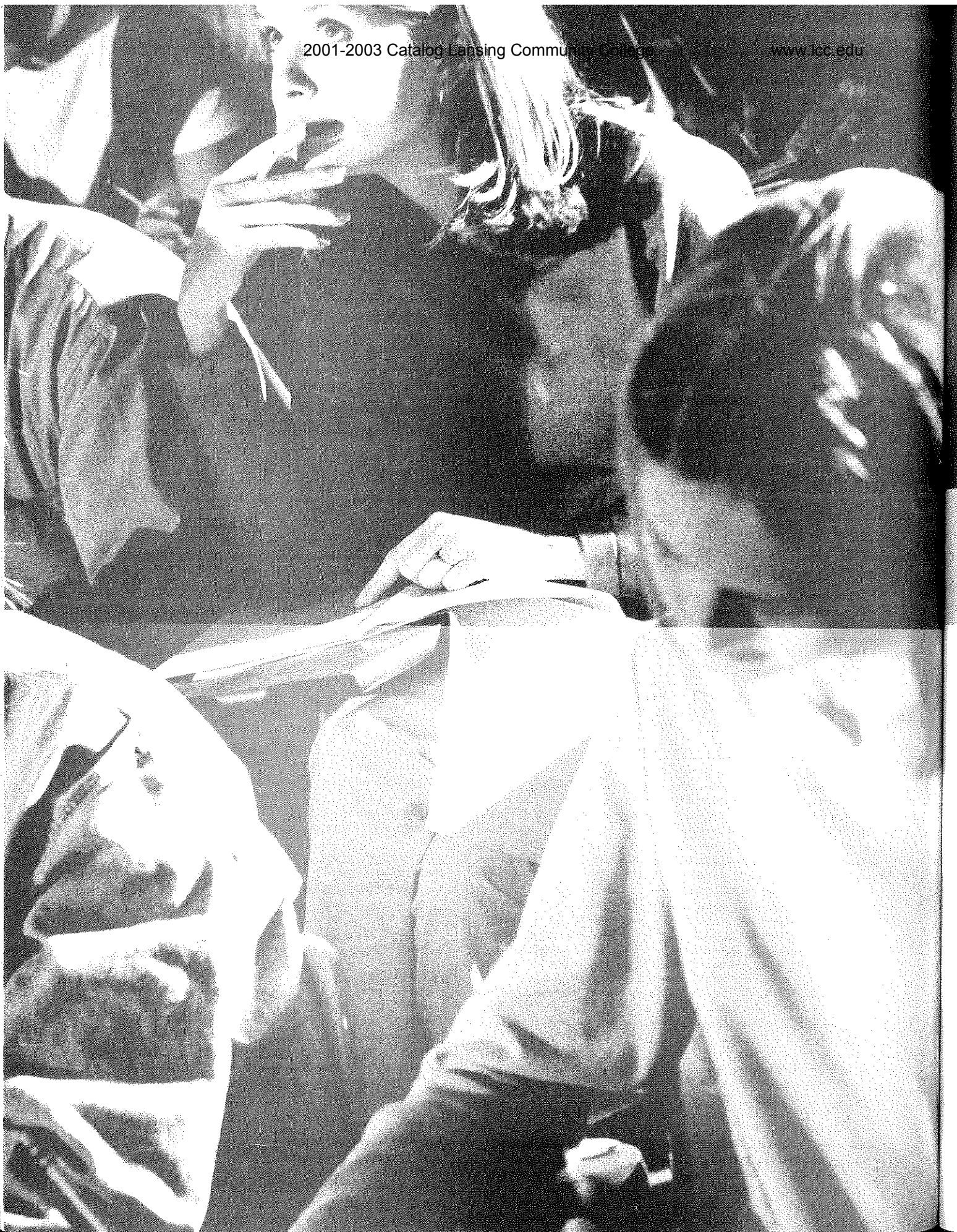
1. Students are advised to also review specific transfer curricular guides. Some transfer institutions, for example, may require both a biological and physical science to satisfy the requirements for the degree
2. Students seeking an LCC associate degree must fulfill specific graduation requirements including the LCC General Education Core requirements. See the *General Information* section of this catalog for additional details.

For further information and advising, contact an LCC academic advisor or counselor located in Suite 2300, Gannon Vocational-Technical Center, (517) 483-1904.

The following 4-year institutions are signatory to the MACRAO Transfer Agreement

*Adrian College	*Lake Superior State University
*Albion College	*Lawrence Technological University
*Alma College	*Madonna University
Aquinas College	*Michigan State University
Baker College	*Michigan Technological University
*Calvin College	Northern Michigan University
Central Michigan University	Northwood University
Cleary College	*Oakland University
Davenport University	Olivet College
*Detroit College of Business	Rochester College (formerly
*Eastern Michigan University	Michigan Christian College)
Ferris State University	*Saginaw Valley State University
*Grand Valley State University	*St. Mary's College
*Hope College	*Siena Heights University
*Kalamazoo College	Spring Arbor University
*Kettering University (formerly GMI)	*Western Michigan University

*Some limitations may apply. Check with individual college/university



A black and white photograph showing a close-up of a hand holding a pen, poised to write on a document. The background is dark and out of focus.

Course Descriptions

LANSING COMMUNITY COLLEGE 2001-2003 CATALOG



HOW TO READ COURSE DESCRIPTIONS

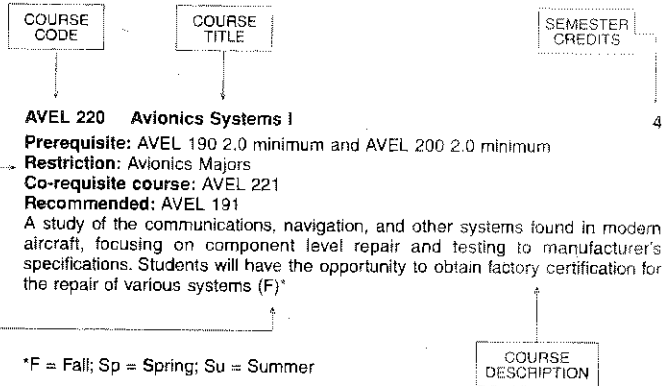
Each course description has seven (7) categories of information as follows:

1. Course code
2. Course title
3. Number of semester credit hours
4. Prerequisite
5. Course description
6. Semester planned

Previous courses, skill levels, training and/or experience required for enrollment. **Other prerequisites may be added.** See *Course Schedule* or department each semester for current information.

Indicates when department plans to offer course, but **does not guarantee** that the course will be offered. See *Course Schedule* or department each semester for current information.

For example:



COURSE CODES USED IN DESCRIPTIONS

Courses are listed in course code order. The sequence is as follows:

ACCG	Accounting	DHYN	Dental Hygiene
AERO	Aerospace Studies	ECON	Economics
AGRI	Agriculture	EDUC	Education
AHCC	Allied Health Courses	EFSN	English for Specific Needs
ANTH	Anthropology	ELCT	Electronics Technology
ARCH	Architecture	ELTE	Electrical Technology
ARTS	Art, Design and Multimedia	EMSA	Emergency Medical Services
ARWS	Art Seminars and Workshops	EMSB	Emergency Medical Services Seminars
ASTR	Astronomy	EMTA	Emergency Medical Technology
AUTO	Automotive	ENGL	English
AVAF	Aviation Airframe Maintenance	ENRI	Enrichment
AVEL	Aviation Electronics	ENVR	Environmental Science
AVFT	Aviation Flight Training	ESLP	English as a Second Language
AVGM	Aviation General Maintenance	ESLW	English as a Second Language Workshop
AVGS	Aviation Ground School	FILM	Film Production and Direction
AVIR	Aviation Instrument Repair	FIRE	Fire Science
AVPP	Aviation Powerplant Maintenance	FLNG	Foreign Language
AVST	Aviation Simulator Training	FREN	French
BDCS	Business Development Seminars	GEOG	Geography
BIOL	Biology	GEOI	Geology
BLDR	Building Related	GERO	Gerontology
BLDT	Building Trades	GRET	Geographic Information Systems
BUSN	Business	GRMN	German
CABS	Computer Applications Using Business Software	HIST	History
CADD	Computer-Aided Drafting and Design	HMFS	Hotel/Motel and Food Service Operations
CHCE	Continuing Health Careers	HONR	Honors
CHDV	Child Development	HORT	Horticulture
CHEM	Chemistry	HUMS	Humanities
CHSE	Community Health Services	HUSE	Human Services
CISB	Computer Information Systems for Business	HVAC	Heating, Ventilating, and Air Conditioning
CIVL	Civil Technology	IDMS	Diagnostic Medical Sonography
CJUS	Criminal Justice	IMAG	Photography Technology
CNCP	Computerized Numerical Control Program	INSU	Insurance
COOP	Cooperative Education	INTR	Interior Design
CPSC	Computer Science	IRXT	Radiologic Technology
CUAI	Credit Union Accounting and Insurance	ISCI	Integrated Science
CUMA	Credit Union Management	JAPN	Japanese
DADH	Dental Hygiene	JRNL	Journalism
DANC	Dance	LABR	Labor Relations

LAND	Landscape	PHYS	Physics
LEGL	Legal Assistant/Law	POLS	Political Science
LING	Linguistics	PSYC	Psychology
MACH	Machine Tool Technology	QUAL	Quality Assurance
MASG	Massage Therapy	RDGR	Reading: Restricted
MATH	Mathematics	READ	Reading
METR	Meteorology	REAL	Real Estate
MFGM	Manufacturing Maintenance	RELG	Religion
MGMT	Management	SCIN	Science Technology Internship
MILS	Military Science	SCIS	Science Seminars
MKTG	Marketing	SDEV	Student Development
MTEC	Media Technology	SIGN	Sign Language
MUSC	Music	SOCL	Sociology
NURS	Nursing	SOWK	Social Work
OADM	Office Administration	SPAN	Spanish
PARA	Paramedic	SPCH	Speech Communication
PFAQ	Physical Fitness: Aquatics	SPEL	Spelling Development
PFCW	Physical Fitness: Combative/Weight Training	STAT	Statistics
PFDA	Physical Fitness: Dance	STEC	Stage Technology
PFFT	Physical Fitness: Fitness	SURG	Surgical Technology
PFHC	Physical Fitness: Health/Fitness Cardiac	TDTP	Truck Driver Training Program
PFHW	Physical Fitness: Health/Fitness Wellness	TEDU	Teacher Education
PFIS	Physical Fitness: Individual Sport/Interest	THEA	Theater
PFKN	Physical fitness: Kinesiology	TRVL	Travel and Tourism
PFOA	Physical Fitness: Outdoor Activity	VCBL	Vocabulary Improvement
PFPR	Physical Fitness: Professional	VIET	Vietnamese
PFTS	Physical Fitness: Team Sport	WELD	Welding Technology
PHIL	Philosophy	WRIT	Writing
PHON	Phonics	WRTR	Writing: Restricted

DESCRIPTIONS

ACCG - Accounting

ACCG 100 Practical Accounting Non-Major	3	ACCG 231 Managerial Accounting	4
Prerequisite: None		Prerequisite: ACCG 230 2.0 minimum	
Students will learn the bookkeeping procedures necessary for preparation of financial statements and payroll. Manual and computer systems will be covered. (F, Sp, Su)		This course focuses on the accountant's role in the organization; cost information gathering, processing and reporting for various decision and control purposes; pricing; cost allocation; project control; mix and yield variances; uncertainty; variance investigation; inventory management; cost management; strategic planning; and management control. (Sp)	
ACCG 101 Accounting Info for Management	3	ACCG 235 Budgeting	2
Prerequisite: None		Prerequisite: ACCG 211 2.0 minimum	
Students will learn to interpret financial statements and use this information for analysis, budgeting, and decision-making. (F, Sp)		This course covers the budget cycle of an organization, both public and private, from a managerial perspective. Topics covered include budgetary terms, concepts and general format, performance budgeting, program budgeting, zero base budgeting, budgeting approval process, budgetary control, and the auditing phase of a budget. (F)	
ACCG 140 Income Tax Preparation	3	ACCG 240 Federal Income Tax I	4
Prerequisite: None		Prerequisite: ACCG 211 2.0 minimum	
Students will complete individual income tax returns and supporting schedules according to the Internal Revenue Code. The focus is on the completion of forms rather than the theoretical aspects of the tax law. (F)		This class is the first in a two-semester sequence in federal income tax. This course deals with taxation of individuals from a historical and theoretical perspective, as well as preparation of individual income tax returns under current tax law. (F, Sp)	
ACCG 160 Payroll Systems and Taxes	2	ACCG 241 Federal Income Tax II	4
Prerequisite: None		Prerequisite: ACCG 240 2.0 minimum	
Recommended: ACCG 100 or Equivalent Work Experience		This class is the second in a two-semester sequence in federal income tax. This course deals with the taxation of corporations, partnerships, estates, trusts, and tax exempt entities from a historical and theoretical perspective, as well as preparation of tax and information returns under current tax law. (Sp)	
This course covers laws affecting payroll, calculation of payroll and payroll taxes using both manual and computer payroll systems, preparation of tax forms for payroll taxes, sales and use taxes, and personal property taxes. (Su)		ACCG 245 Accounting Internship	2
ACCG 210 Principles of Accounting I	4	Prerequisite: ACCG 210 2.0 minimum and Department Approval	
Prerequisite: None		This course provides an opportunity to apply classroom learning to a career-related position by working a minimum of 128 hours at an approved work site. A student may do an internship his/her won job only if the duties are new, accounting related, and provide an appropriate learning situation. (F, Sp, Su)	
Recommended: Algebra Knowledge		ACCG 250 Advanced Accounting	4
Principles of Accounting I is the first class of a two-semester sequence focusing on financial accounting, including accounting for service organizations and merchandisers. Topics covered include the basic accounting cycle, financial reporting, accounting theory, and accounting for inventories, cash, receivables and payables, plant assets, and stockholders equity. (F, Sp, Su)		Prerequisite: ACCG 221 2.0 minimum	
ACCG 211 Principles of Accounting II	4	This course covers business consolidations, foreign currency accounting, and partnerships in depth. In addition, the course provides an overview of governmental and nonprofit accounting. (Su)	
Prerequisite: ACCG 210 2.0 minimum		ACCG 260 Accounting Systems	4
Recommended: Intermediate Algebra or Higher		Prerequisite: ACCG 210 2.0 minimum	
Principles of Accounting II is the second course in the two-semester accounting sequence. Topics include statement of cash flows, budgets and other managerial reports, capital budgeting, short-term decision-making, equity investments, time value of money, bonds, manufacturing accounting, job and process costing systems, and accounting for quality and cost management. (F, Sp, Su)		Recommended: Keyboarding Experience	
ACCG 220 Intermediate Accounting I	4	Accounting Systems prepares students to work with and design information systems and to use the scientific methods in problem solving. Issues and problems related to microcomputers and other technology on accounting systems are emphasized. Students analyze systems, work with manual and computerized accounting systems, database design, and problem solving with spreadsheets. (F, Sp)	
Prerequisite: ACCG 211 2.0 minimum		ACCG 266 Independent Study Accounting	1-4
Recommended: Electronic Spreadsheet Experience		Prerequisite: Department Approval	
Financial Accounting and Reporting in accordance with Generally Accepted Accounting Principles including a review of financial accounting covered in the Principles course. Topics include the conceptual framework and environment of accounting, time-value-of-money, current assets and liabilities, plant assets, intangible assets, and note disclosures involved in presenting financial statements. (F, Sp)		With this course, students will learn advanced accounting topics as a part of a class, an independent study, or a project. Grading criteria and course objectives are determined at the first meeting. The course requires a minimum for each credit earned of either 16 classroom hours or 48 independent study hours. (F, Sp, Su)	
ACCG 221 Intermediate Accounting II	4	ACCG 271 Principles of Finance	3
Prerequisite: ACCG 220 2.0 minimum		Prerequisite: ACCG 211 2.0 minimum	
Continuation of ACCG 220 covering financial accounting and reporting in accordance with GAAP. Topics include stockholders' equity, earnings per share, investments, revenue recognition, accounting for income taxes, and long-term liabilities including pensions and capital leases, statement of cash flows, changes and error corrections, and full disclosure in financial reporting. (F, Sp)		This course emphasizes the short- and long-term decisions a financial manager may face. Topics include working capital management, risk, cost of capital, capital markets, long-term debt, stocks and dividend policy, mergers and acquisitions, and international financial markets as these topics relate to obtaining financing for a business. (Su)	
ACCG 230 Cost Accounting	4	ACCG 280 Governmental Accounting	4
Prerequisite: ACCG 211 2.0 minimum		Prerequisite: ACCG 211 2.0 minimum	
Recommended: Electronic Spreadsheet Experience		Applications of fund accounting principles are applied to governmental (local and state) and not-for-profit entities. Students learn skills necessary to understand the organization, accounting functions, auditing, and financial reporting practices of governmental and non profit organizations. Governmental Accounting Standards Board (GASB) and Financial Accounting Standards Board (FASB) requirements are taught. (Sp)	
This course focuses on cost-volume-profit analysis costing methods for service and merchandising businesses. Other topics include activity based costing, job order costing, responsibility accounting, budgeting, standards, variable vs. full costing, joint and by-products, process costing, spoilage, project control, and capital budgets. Computer applications are emphasized. (F)			

ACCG 290 Auditing	3
Prerequisite: ACCG 220 2.0 minimum	
Students will primarily learn about the audit of historical financial statements as performed by certified public accounting firms. Material covered on the CPA exam will be emphasized. An extensive practice case that provides simulated hands-on experience will be included. (F)	
ACCG 295 CPA Review - Tax,Mgr,Cost,Gov	1
Prerequisite: None	
Recommended: Meet Requirements for CPA Examination	
The course is designed to provide CPA exam candidates with a review of federal taxation, cost, managerial, governmental and nonprofit accounting. Emphasis is given to typical exam questions and strategies to answer them correctly. (F, Sp)	
ACCG 296 CPA Review - Business Law	1
Prerequisite: None	
Recommended: Meet Requirements for CPA Examination	
This course is designed to provide CPA exam candidates with a review of business law, especially the provisions of the Uniform Commercial Code. Emphasis is given to typical exam questions and strategies to answer them correctly. (F, Sp)	
ACCG 297 CPA Review - Auditing	1
Prerequisite: None	
Recommended: Meet Requirements for CPA Examination	
This course is designed to provide CPA exam candidates with a review of audit concepts, assumptions, and procedures. Emphasis is given to typical exam questions and strategies to answer them correctly. (F, Sp)	
ACCG 298 CPA Review - Fin Acct/Report	1
Prerequisite: None	
Recommended: Meet Requirements for CPA Examination	
This course is designed to provide CPA exam candidates with a review of the theory and practice of financial accounting and reporting for business enterprises. Emphasis is given to typical exam questions and strategies to answer them correctly. (F, Sp)	
AERO - Aerospace Studies	
AERO 111 Air Force Today I	1
Prerequisite: None	
This course provides an introduction to the U.S. Air Force today. Course topics include mission and organization, group leadership problems, and introduction to communication skills. Includes a leadership laboratory. (F)	
AERO 112 Air Force Today II	1
Prerequisite: None	
This course provides an introduction to the U.S. Air Force today. Course topics include officership and professionalism, group leadership problems, and introduction to communication skills. Includes a leadership laboratory. (Sp)	
AERO 211 Development of Air Power I	1
Prerequisite: None	
This course focuses on Air Force heritage. Course topics include evaluation of air power concepts and doctrine, introduction to ethics and values, introduction to leadership, and the continuing application of communication skills. Includes a leadership laboratory. (F)	
AERO 212 Development of Air Power II	1
Prerequisite: None	
This course continues the historical perspective of AERO 211 beginning with Vietnam. Course topics include the role of technology in the growth of air power, introduction to Quality Air Force, group leadership problems, and the continuing application of communication skills. Includes a leadership laboratory. (Sp)	
AGRI - Agriculture	
AGRI 101 Principles/Precision Agritech	2
Prerequisite: None	
This course introduces the field of precision agricultural technology. The combining of the latest technologies, i.e., Global Positioning Systems and Integrated Pest Management, make traditional agricultural practices as accurate and customized as possible for each specialized crop. (F, Sp)	

AGRI 106 Disease/Insect Agrinomic Crops	2
Prerequisite: None	
This course is for the professional applicator or farm operator interested in a basic knowledge of insects, diseases, vertebrates, and microorganisms that affect agrieconomic crops. Environmental problems: soil, fertilizers, planting, integrated pest management, and problem solving techniques will be stressed. Can be used toward pesticide certification by the Michigan Department of Agriculture. (Sp)	
AGRI 200 Vegetation and Weed Management	3
Prerequisite: None	
Students will develop skills necessary to monitor, control, and identify by species both vegetation and weed plants. Vegetation will be evaluated from seedling to mature stage for proper control measures by both natural and chemical controls. Various chemicals will be judged for environmental impact and effective control. (F, Sp)	
AGRI 201 Prin/Sustainable Agriculture	3
Prerequisite: None	
The modern era principles of sustainable agriculture will be covered by way of lecture and demonstration. The practice of proper plant selection, species requirements, land use, fertilization needs, and pesticide practices will be highlighted. Scientific practices utilized in plant genetics and technology applications will also be discussed. (Sp)	
AGRI 202 Agri Soils and Crop Management	3
Prerequisite: None	
This course covers all aspects of soils related to agricultural production of food and fiber crops. Soil classification, texture, composition and conditions will be analyzed, evaluated and managed. Soil conditions relating to environmental fertilization and composition problems will be evaluated. Soil erosion and conservation management practices will also be highlighted. (F, Sp)	
AGRI 211 Agricultural Crop Production	3
Prerequisite: None	
This course will focus on the basic components of cash crop production in the modern agricultural environment. Crop identification management and harvesting techniques will be highlighted for the major crops utilized in today's marketplace. Crop production techniques will be emphasized with a thorough evaluation of modern technology practices. (Sp)	
AGRI 212 Vegetable Crop Production	3
Prerequisite: None	
This agricultural production course will cover the seed production, planting, management, IPM and harvesting of vegetable crop plants. Vegetable crops such as sweet corn, tomatoes, peppers, beans, spinach, melons, peas and cold weather crops will be discussed. Vegetable crop marketing in the Great Lakes region will also be discussed. (F, Sp)	
AGRI 213 Ag Site Specific Research Tech	3
Prerequisite: None	
This course will evaluate the various new technologies available to farmers and agriculturists. Technologies such as computers, GIS systems, GPS receivers, field monitors, sensors, pad computers, etc. will be evaluated as to their function and incorporation into specific farming production practices. IPM and crop genetic technologies will also be discussed. (Sp)	

AHCC - Allied Health Careers Courses

AHCC 106 Introduction to Pathology	2
Prerequisite: BIOL 145 2.5 minimum (previously ANAT 145)	
General principles of pathology are discussed, rather than specific disease entities, to develop a new way of thinking about disease processes. Concepts of disease processes and their effect on normal structure and function of the body are emphasized. (F, Sp)	
AHCC 110 Pharmacology-Allied Health	2
Prerequisite: BIOL 145 2.5 minimum (previously ANAT 145)	
This course is designed to familiarize the student with common medications encountered in health care occupations. Emphasis is on drug categories and the responsibilities associated with medication administration. (F, Sp, Su)	

AHCC 111 EKG for Health Care Providers 1
Prerequisite: None
Recommended: Health Careers Applicant or Professional
 This course is designed to teach the basic skills of electrocardiography necessary to perform, process, and explain the electrocardiogram. An overview of anatomy and physiology of the cardiovascular system, operation of the electrocardiograph and recording EKGs, cardiac pathology, and basic cardiac rhythm recognition will be presented. (F, Sp)

AHCC 112 Health Law and Ethics 2
Prerequisite: None
Recommended: Health Careers Applicant or Professional
 This course presents for discussion legal and ethical issues arising from the organization and delivery of health care services. Topics include contracts, torts, business law; medical recordkeeping and retention; physicians' public duties; licensure, certification and regulation of health professionals; consent for treatment; and exploration of issues arising from various bioethical topics. (F, Sp)

AHCC 121 Herbology in Health Careers 3
Prerequisite: Reading Level 5 and Writing Level 4
Recommended: Health Careers Student or Professional
 Principles of herbology are discussed along with an overview of Western and Eastern herbal traditions. Pronunciation of names for both Western herbs and herbs used in traditional Chinese medicine is emphasized. Concepts of health, disease and treatment from Western versus Eastern medical perspectives are discussed with emphasis on herbal interactions with drugs and the use of herbal alternatives to drug therapies. (F, Sp)

ANTH - Anthropology

ANTH 270 Cultural Anthropology 3
Prerequisite: Reading Level 5 and Writing Level 6
 This course compares ways of life for societies worldwide using anthropological theory and methodology. Basic institutions of pre-industrial society, such as kinship, religion, law, politics, and economics are examined to provide a better understanding of the diversity of contemporary societies. Cultural variations and the role culture plays in adapting to the environment is emphasized. (Sp)

ANTH 271 Medical Anthropology 3
Prerequisite: Reading Level 5 and Writing Level 6
 An overview of concepts used in anthropology of health and illness, and delivery of health care in diverse settings. Biocultural and cultural approaches to illness are examined from a comparative cross-cultural perspective against a background of evolutionary ecology, illustrating how therapeutic systems form an integrated aspect of society and culture. (F)

ANTH 275 Physical Anthr and Archaeology 3
Prerequisite: Reading Level 5 and Writing Level 6
Recommended: SOCL 120
 An overview of human biological and cultural evolution as evidenced in fossil records. Mechanisms of evolution and cultural adaptation will be traced from prehistoric origins through the development of modern homosapians. Major theoretical approaches and methodologies within the subdisciplines of anthropology will be incorporated. (F)

ANTH 276 World Archaeology 3
Prerequisite: Reading Level 5 and Writing Level 6
Recommended: ANTH 270 and/or SOCL 120
 A general survey of archaeology. Includes an overview of the history of the field and the basic theories and methods employed in the study of prehistoric and historic cultures. Archaeological data and sites are used to explain the extinction and continuation of human societies. (Sp)

ARCH - Architecture

ARCH 100 Intro to Architecture Drafting 3
Prerequisite: Math Level 3
 Students will be introduced to the proper techniques of architectural line work, lettering, orthographic projection, and axonometric drawings. Techniques of architectural dimensioning, the use of symbols, and the production of a basic floor plan and elevations will be accomplished. (F, Sp, Su)

ARCH 101 Architectural Drafting I 4
Prerequisite: Math Level 3
Recommended: ARCH 100 or Equivalent
 This course is the first of a four-part series of residential and light commercial architectural drafting courses. Students will use previously obtained basic drafting techniques to draw a series of residential details. The development of professional quality drafting, lettering, research, and communication techniques will be emphasized. (F, Sp, Su)

ARCH 102 Architectural Drafting II 4
Prerequisite: ARCH 101 1.0 minimum
Recommended: ARCH 121 or Concurrently
 This course is the second in a four-part series of residential and light commercial architectural drafting courses. Students will use previously obtained basic drafting techniques and knowledge of residential detailing to design and draft basic architectural design problems, residential floor plans, elevations, and building sections. (F, Sp, Su)

ARCH 121 Visual Communication I 3
Prerequisite: None
Recommended: ARCH 100 or Equivalent
 This course concentrates on architectural graphics and will introduce students to basic techniques of freehand sketching, drafting, orthographic, axonometric, and perspective drawings. Entourage and delineation skills will also be addressed. The production of the most commonly used techniques of black and white architectural rendering and presentation drawing will be studied. (F, Sp, Su)

ARCH 122 Visual Communication II 3
Prerequisite: None
Recommended: ARCH 121
 This course is a continuation of Visual Communication I. Students will gain knowledge of basic color rendering techniques using a variety of media. (Sp)

ARCH 126 Architectural Model Building 2
Prerequisite: None
 Students in this course will enhance their design and communication skills by developing various techniques for building three-dimensional architectural models. Examples constructed will range from the most basic of study models, using readily available materials, to more sophisticated presentation models. (F, Sp)

ARCH 128 Residential Planning 2
Prerequisite: None
 The goal of this course is to study the theories and practices of single-family residential design. Through research, layout of interior design elements, and their application in preliminary design format, students will advance their knowledge of residential design. Development of lettering and verbal communication skills will be emphasized through presentation. (F, Sp)

ARCH 141 Architectural History I 3
Prerequisite: None
 Beginning with ancient times, this course studies the major civilizations and works of architecture, and analyzes the form and function of the built environment contributed by the most significant of the Western civilizations. A variety of visual media will be used to present the major theories, architectural works, and the significant personalities contributing to architecture up to the Italian Renaissance. (F, Sp)

ARCH 142 Architectural History II 3
Prerequisite: None
Recommended: ARCH 141
 This course is the second in a series about the architectural history of the western world. The works and figures of architecture and the decorative arts in western architectural history from the 1600's to contemporary times are examined. (F, Sp)

ARCH 146 Preser/Adaptive Reuse Architect 3
Prerequisite: None
 This course is designed as an overview of the principles and practices of preservation, restoration, and adaptive reuse architecture. Students will have the opportunity to work on a project of their choosing while being introduced to research methods, publications, and examples of preservation and the adaptive re-use of existing structures. (F, Sp)

ARCH 181 Barrier-Free Design 3
Prerequisite: None
 This course covers the design, construction, and inspection aspects of commercial buildings required to be accessible to the handicapped. Michigan and federal laws, barrier-free residential design, and design practice problems are included. (F, Sp, Su)

- ARCH 182 Universal Design** 3
Prerequisite: None
Recommended: ARCH 100 and ARCH 181
 This course is designed for students with some architectural drafting experience. Students will apply ADA laws as well as Michigan's Barrier Free or Universal Design to residential design. Both study cases and original design projects will be used. (F, Sp)
- ARCH 201 Architectural Drafting III** 4
Prerequisite: ARCH 102 1.0 minimum and Math Level 4
Recommended: ARCH 141
 This course is the third of a four-part series of residential and light commercial architectural drafting courses. Students will use previously obtained drafting, research, and presentation skills to design, delineate, present, and draft a light commercial project from basic schematics to working drawings. (F, Sp, Su)
- ARCH 202 Architectural Drafting IV** 4
Prerequisite: ARCH 201 1.0 minimum
Recommended: ARCH 271 or Concurrently
 This course is the conclusion in a four-part series of residential and light commercial architectural drafting courses. Students will use previously obtained drafting, research, and presentation skills to complete the working drawing floor plans, elevations, sections, and details for the light commercial projects started in the preceding course. (Sp)
- ARCH 211 Design Studio I** 3
Prerequisite: None
Recommended: ARCH 101 or Concurrently
 This course is an introduction to the basic theories and methods of architectural design, problem-solving techniques, and design methodologies using contemporary architects as examples. Students will be given a series of problem-solving exercises and will be instructed in developing presentation and verbal techniques to present their solutions. (F, Sp)
- ARCH 212 Design Studio II** 3
Prerequisite: ARCH 211 2.0 minimum
 This course will use the skills developed in ARCH 211 to expand the student's understanding and processes for designing three-dimensional architectural space. Using models and various graphical mediums, students will explore the effects of scale, circulation, light, color, and texture on the spaces and forms created. (F, Sp)
- ARCH 213 Facilities Design** 3
Prerequisite: None
Recommended: ARCH 101 or Equivalent
 In this course, students will explore, tour, and study the design theory behind a full range of structures used for office and manufacturing purposes. Systems of manufacturing and how they relate to the structures which house them will be studied. (F, Sp)
- ARCH 221 Architectural DataCAD I** 4
Prerequisite: None
Recommended: ARCH 100 or Equivalent and Windows Experience
 This is an introduction to architectural computer-aided drafting. Students will use DataCAD's Edit and Utility functions to create a series of two-dimensional drawings, including floor plans, elevations and building sections. An introduction to DataCAD's 3-D Modeler will also allow students to develop basic three-dimensional images. (F, Sp, Su)
- ARCH 222 Architectural DataCAD II** 4
Prerequisite: None
Recommended: ARCH 221
 This course is a continuation of ARCH 221 and will develop students' skills by introducing advanced two-dimensional operations, the creation and use of template symbols, and a complete overview of DataCAD's macro programs. Complete three-dimensional modeling will be taught including complex 3-D entities for developing professional presentations. (F, Sp)
- ARCH 225 Arch DataCAD Independent Study** 1-4
Prerequisite: ARCH 222 2.0 minimum and Department Approval
 This course is intended to give advanced architectural students an opportunity to complete a special project(s) that relates to the student's curriculum. The student will research, outline, design and construct a project(s) of their own selection with the approval and guidance of the instructor, using the DataCAD software program. (F, Sp, Su)
- ARCH 231 Architectural AutoCAD I** 4
Prerequisite: None
Recommended: ARCH 100 or Equivalent and Windows Experience
 This entry-level course introduces AutoCAD, a PC-based computer graphic system, for architectural applications. Students will concentrate on two-dimensional drawing and editing functions for creating floor plans, elevations, and building sections. An introduction to three-dimensional modeling techniques will also be covered. (F, Sp, Su)
- ARCH 232 Architectural AutoCAD II** 4
Prerequisite: None
Recommended: ARCH 231
 This course is a continuation of the basic/introduction of AutoCAD, and utilizes advanced two-dimensional techniques and a strong emphasis in the three-dimensional environment. The course will also emphasize advanced methods of drawing/file setup, presentation techniques, and introduce the student to various methods of program customization. (F, Sp)
- ARCH 235 Arch AutoCAD Independent Study** 1-4
Prerequisite: ARCH 231 2.0 minimum and Department Approval
 This course is intended to give advanced architectural students an opportunity to complete a special project(s) that relates to the student's curriculum. The student will research, outline, design and construct a project(s) of their own selection, with the approval and guidance of the instructor, using the AutoCAD software program. (F, Sp, Su)
- ARCH 237 Arch Computer Rendering** 3
Prerequisite: None
Recommended: (ARCH 222 or ARCH 232) and Windows Experience
 This course is intended for the advanced architectural computer graphics student. Using the three-dimensional graphics skills obtained in one or more of the architectural preliminary computer graphics courses, students will learn to produce three-dimensional wire frame models, advanced architectural computer renderings, and photo realistic pictorials. (Sp)
- ARCH 251 Architectural MicroStation I** 4
Prerequisite: None
Recommended: ARCH 100 or Equivalent and Windows Experience
 This class is an introductory computer graphics course using the MicroStation computer graphics software. Students will learn to develop basic 2-D geometry, editing commands, file manipulation, and utilization of levels, views, text, dimensioning, and plotting. (F, Sp)
- ARCH 252 Architectural MicroStation II** 4
Prerequisite: None
Recommended: ARCH 251 or Equivalent
 This is an intermediate-level computer graphics course. Using the MicroStation software, students will learn to create and manipulate 3-D drawing surfaces and solids, 3-D cells, rendering, lighting, material tables, pattern mapping, and object motion. Upon completion of this class, students will be able to create, manipulate, and render 3-D models. (F, Sp)
- ARCH 255 MicroStation Independent Study** 1-4
Prerequisite: ARCH 252 2.0 minimum and Department Approval
 This course is intended to give advanced architectural students an opportunity to complete a special project(s) that relates to the student's curriculum. The student will research, outline, design and construct a project(s) of their own selection, with the approval and guidance of the instructor, using the MicroStation software program. (F, Sp, Su)
- ARCH 271 Structural Theory** 4
Prerequisite: Math Level 4
Recommended: ARCH 101 or Concurrently
 This course introduces the principles of statics and relates the application of physical forces to structural materials and elements. The structural and design properties of steel, wood, and concrete will be studied. The ability to read structural tables and accurately make calculations will be emphasized. (F, Sp)
- ARCH 273 Environmental Systems** 4
Prerequisite: None
Recommended: ARCH 101 or Concurrently
 This course is designed for architecture and interior architecture students. All elements affecting the interior environment of a commercial or residential structure, such as lighting, HVAC systems, and acoustics, will be studied. Calculations and the sizing of systems will be part of all sections. (F)

ARCH 276 Alternative Structures 3**Prerequisite:** None

A survey of several unconventional construction types that include concrete systems, log building, pole construction, timberframe, structural insulated panel, straw bale, tire building and earthen systems. Field examples will demonstrate many different technologies. Concepts will relate these structures to emerging appropriate architecture issues: integrated technologies, material sustainability and recycling in construction. (F, Sp)

ARCH 278 Building Science 4**Prerequisite:** None

Building science is used to examine how buildings work. The concept of systems integration is studied from the perspective of the building and its occupants in their environmental context. Computer assisted calculation of heat loss, passive solar design and economic analysis will be covered. Communication and analytic skills will be developed through classroom activities and research. (F, Sp)

ARCH 283 Materials of Construction 4**Prerequisite:** None**Recommended:** ARCH 101 or Equivalent

This course consists of the evaluation of the various characteristics of all materials commonly used in residential and light commercial structures. Students will develop a sensitivity to the use of building products based on a knowledge of their properties, limitations, and availability. (F, Sp)

ARCH 295 Arch Independent Study 1-4**Prerequisite:** Department Approval

This course will give advanced architectural students an opportunity to complete a special project(s) that relates to their architectural curriculum. With the approval and guidance of an instructor, the students will research, outline, design, and construct a project(s) of their own selection. (F, Sp, Su)

ARTS - Art, Design and Multimedia**ARTS 102 2-Dimensional Design** 3**Prerequisite:** Reading Level 3 and Writing Level 2**Recommended:** Macintosh Experience

Universal elements and principles of two-dimensional design, design theory and process, with emphasis on composition and its application to black-and-white and color media. (F, Sp, Su)

ARTS 103 3-Dimensional Design 3**Prerequisite:** ARTS 102 2.0 minimum or IMAG 112 2.0 minimum

Line, shape, form, value, color, and texture are explored using a variety of three-dimensional materials and applying principles and elements of design. (F, Sp)

ARTS 110 Special Topics in Fine Arts 1**Prerequisite:** None

This course offers students the opportunity to learn new art techniques, skills and/or styles. These topics are open to students of all skill levels. Specific topics will vary by semester; check semester schedule book for topics to be offered. (F, Sp)

ARTS 131 Drawing I 3**Prerequisite:** (ARTS 102 2.0 minimum or IMAG 112 2.0 minimum) or Concurrently

An introductory studio course using a variety of drawing media and methods that introduces both realism and abstraction. Fundamental elements of drawing, concepts of perception, and exploring properties of various media are stressed. Basic principles of one- and two-point perspective are covered. (F, Sp, Su)

ARTS 132 Life Drawing 3**Prerequisite:** ARTS 131 2.0 minimum

Basic concepts, approaches, and techniques involving drawing the human figure, using materials such as pencil, ink, charcoal, and conte crayon. (F, Sp, Su)

ARTS 133 Surface Anatomy for Artists 3**Prerequisite:** ARTS 131 2.0 minimum

This course is designed specifically for the visual artist. Emphasis will be on identifying and visually representing the effects that the skeletal and muscular systems and body type have on human surface anatomy. Live models will be used. This course cannot be taken as a Science Department anatomy requirement. (F, Sp, Su)

ARTS 136 Figure Sculpture 4**Prerequisite:** ARTS 132 2.0 minimum and (ARTS 133 2.0 minimum or Concurrently)

A studio course in the 3-Dimensional representation of the human figure. The student will use various modeling tools to sculpt the figure in clay. Projects will include: gestural sketches, anatomical details, and reclining, seated and standing full-figure poses. (F, Sp)

ARTS 137 Perspective Drawing 2**Prerequisite:** ARTS 131 2.0 minimum

Further development of the drawing process. This course includes expanded perspective principles and quality of light with an emphasis on visualization. (F, Sp, Su)

ARTS 140 Printmaking I 4**Prerequisite:** ARTS 102 2.0 minimum or Concurrently

An introduction to the various printmaking techniques, tools, and vocabulary of the printmaker. Includes etching, collagraph, monoprinting, and linoleum cut. (F, Sp)

ARTS 141 Printmaking II 4**Prerequisite:** ARTS 140 2.0 minimum

Students expand on processes and concepts introduced in Printmaking (ARTS 140). Emphasizes refining technical skills and conceptual development. (F, Sp)

ARTS 145 Screen Printing I 4**Prerequisite:** ARTS 102 2.0 minimum or Concurrently

An introduction to basic silkscreen stencil processes with an emphasis on registration techniques. Includes constructing a frame and making a phototransparency. (F, Sp)

ARTS 146 Screen Printing II 4**Prerequisite:** ARTS 145 2.0 minimum

Students expand on processes and concepts introduced in Screen Printing I (ARTS 145). Includes an in-depth study of photographic processes in combination with paper, cut film, and block-out stencils. (F, Sp)

ARTS 151 Computer Graphics/Illustration 3**Prerequisite:** ARTS 131 2.0 minimum**Recommended:** Windows 95/98/NT Experience

A beginning course for students interested in creating artistic images using a computer as a tool, building on design and drawing skills. (F, Sp, Su)

ARTS 162 Typography 3**Prerequisite:** (ARTS 102 2.0 minimum or IMAG 112 2.0 minimum) or Concurrently

Use of type in visual communication with an emphasis on creativity. Students will be introduced to the tools, materials, and manual and digital type techniques necessary to professionally use type. (F, Sp, Su)

ARTS 171 Computer Graphics/Photography 3**Prerequisite:** ARTS 102 2.0 minimum or IMAG 112 2.0 minimum**Recommended:** Macintosh Experience

An introduction to computer manipulation of photographic images. Resolution, design and color skills are required for enrollment. (F, Sp, Su)

ARTS 173 Computer Graphics/Web Design 2**Prerequisite:** (ARTS 151 2.0 minimum or ARTS 171 2.0 minimum) or Concurrently and CISB 102 2.0 minimum

A course in visual design—the effective visual presentation of ideas for the web from concept and design to structure, preparation and production. Focus on the elements and principles of design as applied to layout, graphics and animation. (F, Sp, Su)

ARTS 175 Electronic Design 3**Prerequisite:** ARTS 102 2.0 minimum and (ARTS 162 2.0 minimum or Concurrently)**Recommended:** Knowledge of Mac OS and Basic Keyboarding Skills

An introduction to page layout software and vector-based illustration software programs utilizing the Macintosh computer. Emphasis is on using electronic publishing applications for design. (F, Sp, Su)

ARTS 190 Matting and Framing Techniques 1**Prerequisite:** None

An overview of the various materials and techniques for displaying and exhibiting artwork. Students will apply demonstrated techniques to matting and framing their work. (F, Sp)

- ARTS 195 Employ/Busn Issues for Artists** 1
Prerequisite: None
An introduction to business, legal, and marketing issues relevant to visual artists. Students will be introduced to copyright, contracts and negotiation concerns, and basic record keeping. (F, Sp)
- ARTS 200 Painting I** 4
Prerequisite: ARTS 102 2.0 minimum and ARTS 131 2.0 minimum
An introduction to oil and acrylic painting concepts in the Western tradition, ranging from Renaissance to Contemporary. Examines basic materials, tools, techniques, and modes of expression. (F, Sp, Su)
- ARTS 201 Painting II** 4
Prerequisite: ARTS 200 2.0 minimum
A continuation of Painting I (ARTS 200) emphasizing more advanced techniques and increasingly complex problems in painting. A variety of media, techniques, and approaches is encouraged. (F, Sp, Su)
- ARTS 203 Figure Painting** 4
Prerequisite: ARTS 102 2.0 minimum and ARTS 132 2.0 minimum
A studio course in the human figure using various media such as oil paint, watercolor, acrylic paint, and pastel. (F, Sp, Su)
- ARTS 204 Watercolor I** 4
Prerequisite: ARTS 102 2.0 minimum and ARTS 131 2.0 minimum
An introduction to the art of transparent watercolor. Examines paper characteristics, degrees of wetness, brushes and tools, and various techniques in producing watercolor art works. (F, Sp)
- ARTS 205 Watercolor II** 4
Prerequisite: ARTS 204 2.0 minimum
A continuation of Watercolor I (ARTS 204) emphasizing more advanced techniques and increasingly complex problems using watercolor. (F, Sp)
- ARTS 206 Advanced Watercolor** 4
Prerequisite: ARTS 205 2.0 minimum
An opportunity for the advanced student to continue with his or her personal exploration and development of watercolor skills under the guidance of an instructor. (F, Sp)
- ARTS 213 Illustration Fundamentals** 3
Prerequisite: ARTS 132 2.0 minimum
Illustrative techniques are utilized to prepare working sketches and convert them to finished illustrations. This course includes a variety of contemporary, realistic techniques. Emphasis is placed on sound draftsmanship and solving simple graphic problems through illustration. (F, Sp)
- ARTS 216 Humorous Illustration I** 3
Prerequisite: ARTS 131 2.0 minimum or Concurrently
Basic humorous illustration/cartooning foundations are demonstrated. Exercises are given on cartooning heads, animals, objects, and drawing techniques. Graded projects include a caricature utilizing a drawing technique. Originality and imagination are emphasized. (F, Sp, Su)
- ARTS 217 Humorous Illustration II** 3
Prerequisite: ARTS 216 2.5 minimum and (ARTS 132 2.0 minimum or Concurrently)
A continuation of Humorous Illustration I designed to expand the student's humorous illustration skills through a variety of black-and-white and color projects. Projects will concentrate on the various commercial applications of humorous illustration. (Sp)
- ARTS 221 Airbrush Techniques I** 4
Prerequisite: None
Introduction to the operation and techniques of the airbrush in shading and creating textures in both black and white and color. Assignments include using various masking methods and freehand techniques. (F, Sp, Su)
- ARTS 222 Airbrush Techniques II** 4
Prerequisite: ARTS 131 2.0 minimum or Concurrently and ARTS 221 2.0 minimum
A continuation of Airbrush Techniques I (ARTS 221) with an emphasis on more complex airbrushing problems including portrait rendering and painting of non-metallic surfaces. A variety of surfaces will be used including fabric, leather, fingernails, and pastries. (F, Sp, Su)
- ARTS 228 Advanced Digital Imaging** 3
Prerequisite: ARTS 171 2.5 minimum
An advanced level study in the manipulation and processing of digital photographic images. Emphasis is on professional scanning, manipulation and output of digital images using industry standard software products. Instruction includes preparation of images for prepress (hardcopy) and soft display (Multimedia, CD-ROM and World Wide Web). (F, Sp, Su)
- ARTS 231 Comp Graphics/Advanced Illustr** 3
Prerequisite: ARTS 228 2.5 minimum
Full-color illustration techniques are taught using the computer as a tool. Assignments include stylized drawing techniques and design-oriented composition, with an emphasis on problem solving. (F, Sp, Su)
- ARTS 232 Comp Graphics/2-D Animation** 4
Prerequisite: (ARTS 216 2.5 minimum or IMAG 111 2.5 minimum) and ARTS 151 2.5 minimum and ARTS 171 2.5 minimum
Create 2-D animations using the computer. Emphasis is on the history, theory, and principles of animation. (F, Sp)
- ARTS 233 Comp Graphics/2-D Interactive** 4
Prerequisite: ARTS 232 2.5 minimum
A course which uses 2-D animation skills to create interactive presentations and animated Web pages. Emphasis is on basic programming concepts and design. (F, Sp)
- ARTS 234 Comp Graphics/3-D Animation I** 4
Prerequisite: ARTS 151 2.5 minimum and ARTS 171 2.5 minimum
An introduction of 3-D solid modeling, rendering techniques and animation on a desktop graphics system. Introduction of the principles of designing for video. (F, Sp)
- ARTS 235 Comp Graphics/3-D Animation II** 4
Prerequisite: ARTS 234 2.5 minimum
A continuation of 3-D Animation I (ARTS 234). Emphasis on creation of more complex models and animations. (F, Sp)
- ARTS 236 Computer Graphics/Production** 3
Prerequisite: (ARTS 233 2.5 minimum or ARTS 235 2.5 minimum) and ARTS 228 2.5 minimum
This course covers analysis, design, and development of a completed electronic project such as a CD, videotape, or WWW publishing. Techniques include recording and editing of two- and three-dimensional graphics, animation, video, audio, and imaging. Students implement theory and practice for designing, producing, and disseminating multimedia at planning pre-production, managing production, and post-production levels. (F, Sp)
- ARTS 240 Art for Elementary Teachers** 3
Prerequisite: None
Especially for elementary school teachers responsible for the student art experience. Emphasis on developing a greater art appreciation, awareness of art forms, and competency working with a variety of art media. Covers the creative and mental growth of children and their needs in an art situation. (F, Sp, Su)
- ARTS 251 Graphic Design I** 4
Prerequisite: ARTS 102 2.0 minimum and ARTS 162 2.0 minimum and (ARTS 175 2.0 minimum or Concurrently)
An overview of the designer's role in developing comprehensive designs for clients. Color, paper, and type selection will be emphasized. (F, Sp)
- ARTS 252 Graphic Design II** 4
Prerequisite: ARTS 251 2.5 minimum
An overview of publication design and the designer's role in the creative organization of typography, photography, and illustration. Emphasis on editorial concept, format, and design considerations. (F, Sp)
- ARTS 253 Graphic Design III** 4
Prerequisite: ARTS 252 2.5 minimum and MKTG 140 2.5 minimum
An advanced collaborative learning course involving corporate image and the design of promotional graphics, both two- and three-dimensional. Utilizes innovative design and media considerations. (F, Sp)

ARTS 257 Computer Prepress Prod Tech 4**Prerequisite:** (ARTS 228 2.5 minimum and ARTS 252 2.5 minimum) or Concurrently

An overview of digital prepress techniques for computer-generated media, including color separations, trapping, output, and digital file preparation. Instruction includes computer system components, printing terminology and processes. The course emphasis is on professional knowledge and accuracy. (F, Sp)

ARTS 260 Topics in Design & Multimedia 2**Prerequisite:** ARTS 228 2.5 minimum or Concurrently

A study of specific topics affecting the areas of graphic design and multimedia. This course is designed to expose students to the latest theories and practices in the area. Course format will include lectures, discussion, demonstration and hands-on experiences. (F, Sp)

ARTS 261 Topics in Design & Multimedia 3**Prerequisite:** ARTS 228 2.5 minimum or Concurrently

A study of specific topics affecting the areas of graphic design and multimedia. This course is designed to expose students to the latest theories and practices in the area. Course format will include lectures, discussion, demonstration and hands-on experiences. (F, Sp)

ARTS 269 The Portfolio 2**Prerequisite:** Department Approval

Under instructor supervision, students will assemble their best work into a cohesive, relevant presentation for the purpose of securing career-oriented employment. Job search/market skills content, including creative resumes, letter-writing, and self-promotion will focus on matching individual presentations to specific career goals. ARTS 269 is intended as the final program course. (F, Sp)

ARTS 270 Comp Graphics Independent Study 3**Prerequisite:** Department Approval

Individual pursuit of special projects not incorporated in regular class offerings. The student must submit a written application detailing his or her project to receive department approval. (F, Sp, Su)

ARTS 272 Printmaking Independent Study 3**Prerequisite:** Department Approval

Individual pursuit of special projects not incorporated in regular class offerings. The student must submit a written application detailing his or her projects to receive department approval. (F, Sp, Su)

ARTS 276 Art Independent Study 3**Prerequisite:** Department Approval

Individual pursuit of special projects not incorporated in regular class offerings. The student must submit a written application detailing his or her project to receive department approval. (F, Sp, Su)

ARTS 281 Art Internship 3**Prerequisite:** Department Approval

An off-campus field study. Students will gain pre-career experience by working in a studio environment under the supervision of a professional artist/designer. Regularly scheduled progress reports will be given and discussed with supervising faculty member. A minimum of 15 hours per week. (F, Sp, Su)

ARWS - Art Seminars and Workshops**ARWS 120 Basic Drawing** 1**Prerequisite:** None

An introductory course using a variety of materials including pencil, charcoal, and ink. For non-majors. (F, Sp, Su)

ARWS 131 Intro to Computer Illustration 1**Prerequisite:** None

A condensed hands-on workshop introducing computer graphics utilizing sophisticated, user-friendly, artistic software. Programming skills are not necessary. (F, Sp, Su)

ARWS 132 Introduction to QuarkXPress 1**Prerequisite:** None

A condensed, hands-on workshop designed to provide the student with a working knowledge of Quark Xpress software utilizing a Macintosh computer. Emphasis is on desktop publishing applications. (F, Sp)

ARWS 133 Introduction to Adobe InDesign 1**Prerequisite:** None

A condensed hands-on workshop designed to provide the student with a working knowledge of Adobe InDesign software utilizing a Macintosh computer. Emphasis is on desktop publishing applications. (F, Sp, Su)

ARWS 136 Intro to Adobe Illustrator 1**Prerequisite:** None

A condensed, hands-on workshop designed to provide the student with a working knowledge of Adobe Illustrator software utilizing a Macintosh computer. Emphasis is on desktop publishing applications. (F, Sp, Su)

ARWS 137 Intro to Adobe Photoshop 1**Prerequisite:** None

A condensed, hands-on workshop designed to provide the student with a working knowledge of Adobe Photoshop software. Emphasis is on desktop publishing applications. (F, Sp, Su)

ARWS 139 Multi-Media Web Graphics 1**Prerequisite:** None

A hands-on course designed to provide the student with a working knowledge of multi-media and web page design. Emphasis is on web design issues for artistic, creative and/or visual learners using Macintosh computers and a variety of multi-media/web software. (F, Sp, Su)

ARWS 141 Watercolor Workshop 1**Prerequisite:** None

A condensed learning experience introducing the student to the art of transparent watercolor. Emphasis is on the use of different papers, degrees of wetness, tools, and techniques. Students will progress to more complex problems as ability develops. (F, Sp, Su)

ARWS 145 Landscape Painting & Drawing 1**Prerequisite:** None

Emphasis is on the use of color, perspective, and compositional strategies of the landscape. Most sessions spent in the field. All types of media are acceptable. (Su)

ARWS 221 Calligraphy I 1**Prerequisite:** None

Introduces the student to the art of fine writing using italic pens. Emphasis on hand lettering, surveying different styles and scripts used in early manuscripts, and adaptation to modern use. (F, Sp)

ARWS 224 Cartooning Workshop 1**Prerequisite:** None

Emphasizes simple but imaginative characterizations and dramatic exaggerated action in a variety of media including pencil, fibertipped pen, and brush and ink. Previous drawing experience helpful. (F, Sp, Su)

ASTR - Astronomy**ASTR 201 Introductory Astronomy** 4**Prerequisite:** Reading Level 5 and Writing Level 4 and Math Level 4

A survey course of astronomy. Topics include the history of astronomy, the nature of light and spectroscopy, optical instruments, the Earth-Moon system, the Sun and the solar system, stellar classification and evolution, galaxies and cosmology. The Planetarium is used to identify stars and constellations and augments classroom activities. (F, Sp, Su)

AUTO - Automotive**AUTO 100 Auto Service I** 3**Prerequisite:** Reading Level 3 and Writing Level 2 and Math Level 3

This course is intended to provide the student with an extensive orientation to an automotive repair facility while developing tool and equipment usage skills needed to advance in the automotive repair field. (F, Sp, Su)

AUTO 102 Basic Car Care for the Novice 1**Prerequisite:** None

This course is designed for the typical automobile owner who wants to gain a better understanding of the automobile and be able to make some basic repairs. It will encompass an overview of servicing needs and factors related to vehicle safety. Students will be able to inspect their vehicles, make informed decisions on purchasing vehicle products and services, and identify service items the owner might do themselves. (F, Sp)

AUTO 105 Automotive Safety	1	AUTO 144 Auto Body Structural Repair	5
Prerequisite: Department Approval This course will provide the student with an overview of safety policies and procedures used in the automotive repair field. (Su)		Prerequisite: AUTO 141 2.0 minimum and AUTO 143 2.0 minimum This course addresses the repair of the unibody and vehicle frames which often are damaged by major collision forces. The student will learn damage diagnosis and repair techniques including stress relief, heating, welding and corrosion protection. (F, Sp)	
AUTO 110 Auto Electrical Theory	5	AUTO 145 Introduction to Refinishing	5
Prerequisite: AUTO 100 2.0 minimum or Concurrently This course covers basic electron theory and how circuits work. Students will learn to access wiring diagrams, diagnose malfunctioning circuits in vehicles, and repair the malfunctions safely and according to National Automotive Technicians Education Foundation (NATEF) standards. (F, Sp)		Prerequisite: Department Approval The material in this course will form the basis for all automotive refinishing work. Surface preparation, material selection and the use of hand and power tools (including automotive spray guns) will be covered. (F, Sp, Su)	
AUTO 120 Auto Drive Train	3	AUTO 146 Advanced Refinishing	5
Prerequisite: AUTO 100 2.0 minimum or Concurrently This course covers manual transmissions/transaxles, differentials and four-wheel drive components. Students will learn to diagnose, disassemble, inspect and reassemble these components according to National Automotive Technicians Education Foundation (NATEF) standards. (F, Sp)		Prerequisite: AUTO 145 2.0 minimum This course builds on skills developed in AUTO 145. Overall refinishing, spot repairs and color matching with a variety of contemporary color-coat materials will be stressed. (F, Sp)	
AUTO 121 Automatic Transmissions I	5	AUTO 147 Collision Repair Estimating	3
Prerequisite: AUTO 110 2.0 minimum or Concurrently Course covers hydraulic and mechanical principles including diagnosis, removal, disassembly, inspection, and repair of automatic transmissions/transaxles according to National Automotive Technicians Education Foundation (NATEF) standards. (F, Sp)		Prerequisite: AUTO 142 2.0 minimum and AUTO 144 2.0 minimum and AUTO 146 2.0 minimum This course prepares the student for analyzing collision damage, determining what parts are needed for repair, calculating labor allowances and figuring the total cost of repair. Collision repair manuals and computer programs will be used as sources of information. (F, Sp)	
AUTO 122 Automatic Transmissions II	3	AUTO 148 Automotive Plastic Repair	3
Prerequisite: AUTO 121 2.0 minimum This course expands on knowledge obtained in AUTO 121. Topics include diagnosis, disassembly, inspection, and reassembly of automatic transmissions/transaxles. Students will gain knowledge of three additional transmissions/transaxles in this class. All aspects of this course follow National Automotive Technicians Education Foundation (NATEF) standards. (F, Sp)		Prerequisite: AUTO 145 2.0 minimum This course covers repair techniques and materials for repairing the wide variety of plastic materials used in the manufacturing of current vehicles. Refinishing repaired parts is also included. (F, Sp)	
AUTO 130 Automotive Engines	3	AUTO 150 Auto Steering & Suspension	3
Prerequisite: AUTO 110 2.0 minimum or Concurrently This course covers the disassembly, inspection (using specialized tools and measuring equipment), repair, and reassembly of an automotive engine according to engine manufacturer standards and National Automotive Technicians Education Foundation (NATEF) standards. (F, Sp, Su)		Prerequisite: AUTO 100 2.0 minimum or Concurrently This course covers automotive front end alignments and how steering and suspension systems work. Students will diagnose, repair and align steering and suspension systems according to National Automotive Technicians Education Foundation (NATEF) standards. (F, Sp)	
AUTO 133 Small Engine Repair	3	AUTO 160 Auto Heat & Air Conditioning	3
Prerequisite: None This course uses the theory of operation for "small engines" (lawn mowers, out-board motors, chain saws, and other engines up to 18 horsepower) to diagnose problems in operation, repair or overhaul defective components, and make engines operate according to manufacturer standards. (r, Sp, Su)		Prerequisite: AUTO 110 2.0 minimum Course covers the theory, diagnosis, recovery and recycling of Freon and the repair of automotive air conditioning systems according to National Automotive Technicians Education Foundation (NATEF) standards. (F, Sp, Su)	
AUTO 140 Automotive Brakes	3	AUTO 188 Auto Body Repair and Painting	4
Prerequisite: AUTO 110 2.0 minimum or Concurrently This course covers the diagnosis, service and repair of disc and drum standard anti-lock brake system problems according to National Automotive Technicians Education Foundation (NATEF) and manufacturer standards. (F, Sp, Su)		Prerequisite: Department Approval This course covers the identification and safe operation of various equipment in auto body and refinishing facilities. Students will learn to diagnose problems, make necessary repairs and perform refinishing. Disposal of hazardous wastes will be taught in accordance with applicable laws. This course follows Auto Collision Repair (I-CAR) National standards. (F, Sp, Su)	
AUTO 141 Non-Structural Repair	3	AUTO 215 Engine Performance/Tune-Up	5
Prerequisite: Department Approval Recommended: Evidence of Mechanical Ability This course introduces the student to elementary repairs that are completed in the collision repair industry. This allows the student to become familiar with the collision repair field environment. (F, Sp)		Prerequisite: AUTO 130 2.0 minimum Students will obtain knowledge on ignition and emission systems, and will be introduced to computer controls. Topics include the diagnosis, removal, inspection, repair and reassembly of these systems based on National Automotive Technicians Education Foundation (NATEF) standards. (F, Sp)	
AUTO 142 Advanced Non-Structural Repair	5	AUTO 225 Automotive Computers	5
Prerequisite: AUTO 141 2.0 minimum This course is for students who are familiar with the auto body repair environment and are ready to begin development of specific marketable repair skills. (F, Sp)		Prerequisite: AUTO 215 2.0 minimum This course covers automotive engine computer systems, ignition systems, emission systems, exhaust gas treatment systems, air induction, exhaust gas recirculation and early fuel evaporation systems. Students will diagnose, remove, inspect, repair and replace these systems according to National Association for Technical Education Foundation (NATEF) standards. (F, Sp)	
AUTO 143 Auto Body Welding and Cutting	5	AUTO 235 Adv Computer/ABS Brake System	3
Prerequisite: Department Approval Recommended: Evidence of Mechanical Ability This course will present welding processes that will be the basis of many of the repair techniques in any advanced auto body course. MIG, TIG, oxyacetylene resistance spot welding and oxyacetylene plasma arc cutting are included. (F, Sp, Su)		Prerequisite: AUTO 140 2.0 minimum and AUTO 225 2.0 minimum This course covers automotive anti-lock braking systems and advanced computer systems, including the theory and how these systems function. Students will learn to diagnose, disassemble, and repair these systems according to the standards of the National Automotive Technician Education Foundation. (F, Sp)	

AUTO 260 Intro to Alternative Fuels 2

Prerequisite: AUTO 130 2.0 minimum and AUTO 225 2.0 minimum
Students will use various sources in the alternative fueled vehicle industry to learn what alternative fuels are available. Students will closely examine the technologies involved when using compressed natural gas (CNG) as a fuel for vehicles. (F, Sp)

AUTO 261 Alternative Fuels - CNG 3

Prerequisite: AUTO 260 2.0 minimum
This course is designed to help prepare the student to enter the auto repair and service industry. It is an intensive study covering the use of compressed natural gas (CNG) on automobiles and light trucks. Theory, application, installation, diagnosis and safety regulations pertaining to the use of CNG will be covered. (F, Sp)

AUTO 262 Alt Fuels-Propane (LPG) 3

Prerequisite: AUTO 225 2.0 minimum
This course is an intensive study covering the use of propane as fuel for automobiles and light trucks. Theory, application, installation, diagnosis and safety regulations applicable to LPG vehicles will be covered. (F, Sp)

AUTO 260 Automotive Service Laboratory 6

Prerequisite: Department Approval
This laboratory course is designed to provide work experience and develop trade-entry skills in general and light-line repair. (F, Sp)

AUTO 265 Automotive Internship 6

Prerequisite: Department Approval
Students are able to earn credits while employed as a technician in auto mechanics or auto body. The program coordinator must approve the training station and working conditions. (F, Sp)

AUTO 286 Indepen Study/Automotive 1-4

Prerequisite: Department Approval
Special research projects and/or individual readings are used to apply personal and professional experience to the academic area of interest. A minimum of 48 hours of work is required per credit, and the completion of a written project report. (Su)

AVAF - Aviation Airframe Maintenance

AVAF 125 Aircraft Systems I 2

Prerequisite: Department Approval
The study of fuel management, transfer, defueling and fuel pump systems. The course covers the procedures used to inspect, check, service, troubleshoot and repair aircraft fuel systems and fuel system components. Course material emphasizes fluid quantity indicating, fluid pressure and warning systems. (Sp)

AVAF 126 Aircraft Systems II 6

Prerequisite: Department Approval
The study, analysis and repair of aircraft landing gear and brake systems and their related warning systems. Includes the study, inspection, servicing and repair of aircraft hydraulic and pneumatic systems and their related components. (Sp)

AVAF 127 Aircraft Systems III 3

Prerequisite: Department Approval
Course covers the inspection, checking, troubleshooting, servicing and repair of aircraft heating, cooling, air-conditioning, pressurization, oxygen, ice and rain control and fire protection systems. (Su)

AVAF 130 Avionics Airframe Applications 2

Prerequisite: Department Approval
This course covers airframe related subjects necessary for an avionics technician. Topics include aircraft structure principles, installation procedures, material and fastener identification and antenna installation procedures. Students will work with sheet metal and composite structures. (F)

AVAF 134 Aircraft Instruments 2

Prerequisite: Department Approval
Course covers inspection, checking, servicing, troubleshooting, repair of electronic flight instrument systems, both mechanical and electrical speed, altitude, temperature, pressure and flow instrument systems. Also, special removal and installation techniques applicable to aircraft instruments is included. (Su)

AVAF 208 Aircraft Structures I 4

Prerequisite: Department Approval
This course introduces the procedures for identification, inspection, testing and repairing of wood, fabric-covered and sheet metal aircraft. The installation and removal of conventional rivets, forming of aircraft sheet metal, installation of special rivets and fasteners, and an introduction to applying finishing materials will also be covered. (Sp)

AVAF 209 Aircraft Structures II 4

Prerequisite: Department Approval
Covers assembly and rigging of fixed wing and rotary wing aircraft control structures. Provides practical application in removal, installation and adjustment of flight controls by balancing, cable tension and motion studies. Aircraft inspection procedures to insure conformity with flight safety standards will be included. (F)

AVAF 210 Aircraft Structures III 3

Prerequisite: Department Approval
An advanced course covering inspection, repair, layout, bending and assembly of aircraft sheet metal. Inspection, testing and repair of fiberglass, plastics, honeycomb, composite and laminated structures are practiced. Installation and removal of special fasteners for bonded and composite structures and servicing of aircraft windows, doors and interior furnishings is included. (F, Sp)

AVAF 211 Aircraft Electrical I 4

Prerequisite: Department Approval
An intermediate aviation electrical course concentrating on theory, calculation and measurement of A.C. electrical systems. Includes reading and interpreting aircraft electrical circuit diagrams, including those with solid-state devices and logic functions. The installation, checking and servicing of airframe and engine wiring, controls, switches, indicators and protective devices are also covered. (Sp, Su)

AVAF 212 Aircraft Electrical II 4

Prerequisite: Department Approval
Repair of airframe and engine electrical system components with an emphasis on the inspection, checking, servicing and repair of alternating and direct current systems. General troubleshooting techniques are practiced with special emphasis on A.C. and D.C. electrical systems. (Su)

AVAF 246 National Airframe Cert Proced 1

Prerequisite: Department Approval
Study of the Federal Aviation Regulations pertaining to national certification as a licensed airframe mechanic. Includes testing in all required areas of study as a prerequisite to receiving authorization to take the general and airframe national certification test administered by representatives of the Federal Aviation Administration. (F)

AVEL - Aviation Electronics

AVEL 130 Avionics Installations 2

Prerequisite: None
This course includes familiarization with the various types of wires and connectors used in the construction of aircraft wiring harnesses. The student will develop skills in soldering, aircraft wiring diagram reading, standard procedures and weight and balance calculation. (F)

AVEL 150 Avionics Installat/Generat 2

Prerequisite: ELCT 110 2.0 minimum
Co-requisite Course: AVEL 151
Covers the operational characteristics and operation of basic and specialized test equipment found in the avionics industry. Students will develop reading skills in aircraft wiring diagram and weight and balance calculation. Equipment covered includes multimeters, oscilloscopes, power supplies, multifunction test generators, wattmeters, time domain reflectometers and spectrum analyzers. (Sp)

AVEL 151 Avionics Installat/General Lab 1

Prerequisite: ELCT 110 2.0 minimum
Co-requisite Course: AVEL 150
Subjects covered in AVEL 150 will be put to practical use in this laboratory. The student builds and calibrates his/her own volt ohm meter. The student will construct aircraft wiring harnesses and complete soldering exercises. Common electronic and specialized avionics test equipment are used in the lab. (Sp)

AVEL 190 Receiver Troubleshooting	2
Prerequisite: AVEL 151 2.0 minimum and ELCT 112 2.0 minimum	
Co-requisite Course: AVEL 191	
Familiarization with basic superheterodyne receiver principles and operation using block diagrams and component level theory. Various logical troubleshooting techniques are discussed. (Su)	
AVEL 191 Receiver Troubleshooting Lab	1
Prerequisite: AVEL 151 2.0 minimum and ELCT 112 2.0 minimum	
Co-requisite Course: AVEL 190	
Familiarization with basic superheterodyne receiver principles and operation. Various logical troubleshooting techniques will be put to practical use in the laboratory. Students construct, align and troubleshoot an AM superheterodyne receiver. (Su)	
AVEL 200 Flight Line Testing	2
Prerequisite: None	
A study of the avionics systems found aboard modern aircraft focusing on the flight line testing of such systems as VHF communications, VHF navigation, ADF, radar, autopilots and others. (F, Su)	
AVEL 201 Flight Line Testing Lab	1
Prerequisite: AVEL 151 2.0 minimum	
A practical study of the electronics systems found aboard modern aircraft, focusing on the flight line testing of such systems as VHF communications, VHF navigation, ADF, radar, autopilots and others. (F, Su)	
AVEL 220 Avionics Systems I	3
Prerequisite: AVEL 190 2.0 minimum and AVEL 200 2.0 minimum	
Restriction: Avionics Majors	
Co-requisite Course: AVEL 221	
A study of the communications, navigation and other systems found in modern aircraft, focusing on component level repair and testing to manufacturer's specifications. Students will have the opportunity to obtain factory certifications for the repair of various systems. (F)	
AVEL 221 Avionics Systems I Lab	2
Prerequisite: AVEL 201 2.0 minimum	
Restriction: Avionics Majors	
Co-requisite Course: AVEL 220	
A hands-on study of the communications, navigation and other systems found in modern aircraft, focusing on component level repair and testing to manufacturer's specifications. (F)	
AVEL 225 Avionics Licensing/Regulations	1
Prerequisite: ELCT 112 2.0 minimum	
Federal Communication Commission rules and regulations are discussed as they pertain to the avionics technician. Elements 1 and 3 of the FCC General Radio-telephone Operator's License examination are presented to prepare the student for successful completion of the actual examination. (F)	
AVEL 226 FAA Rules/Regs Avionics Techs	1
Prerequisite: AVAF 130 2.0 minimum	
This course covers various Federal Aviation Administration rules and regulations as they pertain to avionics shop operations and the avionics technician. (F)	
AVEL 230 Avionics Systems II	3
Prerequisite: AVEL 190 2.0 minimum and AVEL 200 2.0 minimum	
Restriction: Avionics Majors	
Co-requisite Course: AVEL 231	
A study of navigation, microwave pulse equipment and other systems found in modern aircraft, focusing on component level repair and testing to manufacturers' specifications. Students will have the opportunity to obtain factory certification of the repair of various systems. (Sp)	
AVEL 231 Avionics Systems II Lab	2
Prerequisite: AVEL 201 2.0 minimum	
Restriction: Avionics Majors	
Co-requisite Course: AVEL 230	
A hands-on study of navigation, microwave pulse equipment and other systems found in modern aircraft, focusing on component level repair and testing to manufacturers' specifications. (Sp)	

AVEL 297 Avionics Internship	2
Prerequisite: AVEL 151 2.0 minimum	
Restriction: Avionics and Avionics Installation Majors	
Minimum 128 hours per semester as an aviation electronics intern. Part-time occupational internship in avionics technology. The internships will be at certified repair stations as established by the intern coordinator. (Su)	

AVEL 299 Advanced Avionics Laboratory	2
Prerequisite: AVEL 151 2.0 minimum	
Restriction: Avionics and Avionics Installation Majors	
Students will further develop troubleshooting and installation skills acquired in other courses. Students will work in an environment close to actual working conditions in most avionics repair stations. (Su)	

AVFT Aviation Flight Training

AVFT 201 Flight Training I	7.5
Prerequisite: Department Approval	
Provides in-flight and ground training in a single-engine, non-complex aircraft culminating in aeronautical knowledge, experience and skill in accordance with the Federal Aviation Administration Private Pilot Practical Test standards. (F, Sp)	
AVFT 201A Flight Training I-A	2.5
Prerequisite: Department Approval	
The first module in a series of three for Flight Training I. Provides in-flight and ground training in a single-engine, non-complex aircraft to obtain aeronautical knowledge, experience, and skills for solo flying privileges in accordance with the Federal Aviation Administration Private Pilot Practical Test standards. (F, Sp, Su)	
AVFT 201B Flight Training I-B	2.5
Prerequisite: Department Approval	
The second module in a series of three for Flight Training I. Provides in-flight and ground training in a single-engine, non-complex aircraft to obtain aeronautical knowledge, experience and skills for solo flying privileges in accordance with the Federal Aviation Administration Private Pilot Practical Test standards. (F, Sp, Su)	
AVFT 201C Flight Training I-C	2.5
Prerequisite: Department Approval	
The third module in a series of three for Flight Training I. Provides in-flight and ground training in a single-engine, non-complex aircraft to obtain aeronautical knowledge, experience, and skills for solo flying privileges in accordance with the Federal Aviation Administration Private Pilot Practical Test standards. (F, Sp, Su)	
AVFT 202 Flight Training II	5
Prerequisite: Department Approval	
Provides in-flight and ground training in a single-engine, non-complex airplane, developing the student's instrument, night and cross-country flying skills. (F, Sp, Su)	
AVFT 202A Flight Training II-A	2.5
Prerequisite: Department Approval	
One of two modules for Flight Training II. Provides in-flight and ground training in a single-engine, non-complex airplane, developing the student's instrument, night and cross-country flying skills. (F, Sp, Su)	
AVFT 202B Flight Training II-B	2.5
Prerequisite: Department Approval	
One of two modules for Flight Training II. Provides in-flight and ground training in a single-engine, non-complex airplane, developing the student's instrument, night and cross-country flying skills. (F, Sp, Su)	
AVFT 203 Flight Training III	5.5
Prerequisite: Department Approval	
Provides instruction in a complex single-engine airplane; developing the student's skill at Instrument Flight Rules (IFR) navigation and Air Traffic Control (ATC) procedures in en route and terminal environments. (F, Sp, Su)	
AVFT 203A Flight Training III-A	3
Prerequisite: Department Approval	
One of two modules for Flight Training III. Provides instruction in a complex, single-engine airplane, developing the student's skill at IFR navigation and ATC procedures in en route and terminal environments. (F, Sp, Su)	

AVFT 203B Flight Training III-B 3
Prerequisite: Department Approval
 One of two modules for Flight Training III. Provides instruction in a complex, single-engine airplane, developing the student's skill at IFR navigation and ATC procedures in en route and terminal environments. (F, Sp, Su)

AVFT 204 Flight Training IV 5
Prerequisite: Department Approval
 Provides in-flight and ground instruction in a complex airplane: developing student skills in Instrument Flight Rules (IFR) navigation and Air Traffic Control (ATC) procedures in en route and terminal environments. Students will develop skills at performing commercial proficiency flight maneuvers. Upon completion of this course, the student will take the practical test for commercial/instrument pilot airplane. (F, Sp, Su)

AVFT 204A Flight Training IV-A 2.5
Prerequisite: Department Approval
 The first of two modules for Flight Training IV. Provides in-flight and ground instruction in a complex airplane, developing the student's skills in IFR navigation and ATC procedures in en route and terminal environments. Students will also develop skills for performing commercial proficiency flight maneuvers. Upon completion of this course, the student will take the practical test for instrument pilot airplane. (F, Sp, Su)

AVFT 204B Flight Training IV-B 2.5
Prerequisite: Department Approval
 The second of two modules for Flight Training IV. Provides in-flight and ground instruction in a complex airplane, developing the student's skills in performing commercial proficiency flight maneuvers. Upon completion of this course, the student will take the practical test for commercial pilot airplane. (F, Sp, Su)

AVFT 205 CFI Flight Training 3.5
Prerequisite: Department Approval
 Provides in-flight and ground training in common primary training and complex airplanes. The student will develop instructional skills necessary to train pilots for certification in accordance with Federal Aviation Regulations. The student will take his/her practical test for Certified Flight Instructor Airplane upon completion. (F, Sp, Su)

AVFT 206 Instrument Instructor Flight 2.5
Prerequisite: Department Approval
 Provides in-flight and ground training in a non-complex aircraft. The student will develop instructional skills necessary to train pilots for the instrument rating. The student will take the practical test for the instrument flight instructor rating airplane upon completion of this course. (F, Sp, Su)

AVFT 207 Multi-Engine Flight Training 1.5
Prerequisite: Department Approval
 Provides in-flight and ground instruction in a multi-engine airplane. The student will take the multi-engine practical test upon completion of this course. (F, Sp, Su)

AVFT 208 Multi-Engine Instructor Flight .75
Prerequisite: Department Approval
 Provides in-flight and ground instruction in a multi-engine airplane. The student will develop instructional skills necessary to train students for the multi-engine practical test. The student will take the multi-engine instructor practical test upon completion of this course. (F, Sp, Su)

AVFT 224 Tail Wheel Transition 1
Prerequisite: Department Approval
 Provides students with skills and knowledge required to safely operate a tailwheel aircraft under various conditions. This course is designed for transitioning from operations in a tri-gear aircraft to those of a tailwheel aircraft. Upon completion of course objectives, individuals are issued tailwheel endorsements as per the Federal Aviation Regulations. (F, Sp, Su)

AVGM - Aviation General Maintenance

AVGM 111 Aviation General I 4
Prerequisite: Department Approval
 This course is designed to develop the skills and knowledge required to weigh an aircraft and record the appropriate data. It involves mathematical and basic physics principles related to aviation, including aerodynamics, theory of flight, aircraft structural design and simple machines. (F, Sp)

AVGM 112 Aviation General II 6
Prerequisite: Department Approval
 Introduces the Federal Aviation Regulations involving the mechanic's privileges, limitations and related aviation operations. Includes the selection and use of aviation publications, maintenance forms, records, reports, aircraft drawings, graphs and charts, symbols, blueprints and system schematics. Also focuses on aircraft ground operations and servicing of related aircraft systems. (F, Sp)

AVGM 113 Aviation General III 4
Prerequisite: Department Approval
 This initial aviation electrical course offers instruction in basic electrical theory and its aviation application. It includes the calculation and measurement of voltage, current resistance, continuity and power; and the theory, inspection and servicing of aircraft lead-acid and ni-cad batteries; and the construction of a volt-ohm meter. (F, Sp)

AVGM 114 Material and Processes 5
Prerequisite: Department Approval
 This course covers identification and selection of the appropriate aviation hardware, hand tools, cleaning materials, fluid lines and nondestructive testing methods. Performance of nondestructive testing, precision measurements, aircraft cleaning and corrosion control, fabrication, installation and testing of fluid lines is included. (F, Sp)

AVGS - Aviation Ground School

AVGS 101 Private Pilot Ground School 4
Prerequisite: None
Recommended: SDEV 124
 This course prepares the student for successful completion of the Federal Aviation Administration private pilot written examination. The student will learn basic aerodynamic theory, principles of aircraft/powerplant operation and performance, Federal Aviation Regulations, air traffic control procedures, meteorology, navigation and flight physiology. (F, Sp, Su)

AVGS 121 Aviation Meteorology 4
Prerequisite: None
Recommended: SDEV 124
 This course focuses on the application of meteorological theory to the practical aspects of flight planning. The student will understand basic concepts of weather theory, obtain weather briefings by using a personal computer, interpret domestic and international weather charts, forecasts and reports.(ICAO) and make appropriate "go/no go" decisions. (Sp)

AVGS 211 Instrument Pilot Ground School 4
Prerequisite: None
Recommended: AVGS 121 and SDEV 124
 This course prepares the student for successful completion of the FAA instrument rating written examination. The student will learn operation and interpretation of the flight instruments; the use of en route, approach, SID and STAR charts for navigation; air traffic control procedures and meteorology as it applies to the instrument pilot. (F, Sp, Su)

AVGS 221 Commercial Pilot Ground School 4
Prerequisite: None
Recommended: AVGS 121 and SDEV 124
 This course prepares the student for the successful completion of the FAA commercial pilot written examination. The student will develop knowledge of aerodynamics, high performance aircraft systems, aircraft performance, Federal Aviation Regulations, navigation and flight planning, and meteorology as it applies to commercial pilots. (F)

AVGS 222 Flight Instruct Ground School 4
Prerequisite: None
Recommended: AVGS 121
 This course will prepare the student for the successful completion of the FAA Fundamentals of Instructing and the Flight Instructor-Airplane and Advanced Ground Instructor written exams. The student will develop a flight training syllabus with lesson plans for use in training pilots. (Sp)

AVIR - Aviation Instrument Repair**AVIR 140 Avionics Instruments 1****Prerequisite:** None

Familiarization with common aircraft instruments to include principles of operation, interpretation of indications, testing, proper handling, repair and calibration. Students will learn the proper use of test equipment and instrument repair procedures. (F)

AVPP - Aviation Powerplant Maintenance**AVPP 241 Reciprocating Engine 8****Prerequisite:** Department Approval

Presents the theory and practices used in the removal, inspection, overhaul, service, repair and installation of reciprocating engines. This course also studies the inspection, service, repair and troubleshooting of reciprocating engine lubrication systems. (F)

AVPP 251 Reciprocating Engine Systems 2**Prerequisite:** Department Approval

This course covers the inspection, servicing, troubleshooting and repair of reciprocating engine cooling and exhaust systems. In addition, the inspection requirements necessary to meet established conformity and standards of airworthiness are studied; and reciprocating engine operations and adjustments are conducted using FAA and maintenance publication procedures. (F, Sp)

AVPP 253 Reciprocating Ignition Systems 5**Prerequisite:** Department Approval

This course covers the operation, analysis, inspection, service and repair of reciprocating engine ignition systems and components. This includes magnetos, ignition harnesses, spark plugs and starter systems. (F, Sp)

AVPP 255 Reciprocating Induction System 4**Prerequisite:** Department Approval

Study and analysis of reciprocating engine fuel systems and components. Includes inspection, checking, servicing, troubleshooting and repair of carburetors, water injection systems, heat exchangers, superchargers, intake and induction manifolds and other engine fuel system components. Also includes carburetor overhaul procedures. (F, Sp)

AVPP 257 Aircraft Propeller Systems 4**Prerequisite:** Department Approval

Covers the study, analysis, service and repair of aircraft propellers, systems and controls. Includes propeller synchronizing, ice control, lubrication, balancing, pitch control, repair procedures and removal, and installation of both fixed-pitch and variable-pitch propellers. (F, Sp)

AVPP 259 Turbine Engine I 4**Prerequisite:** Department Approval

Covers the theory of operation and design of the varied turbine engine and turbine-driven auxiliary power unit types, including the induction and cooling systems of each. (F, Sp)

AVPP 261 Turbine Engine II 4**Prerequisite:** Department Approval

Covers inspection, checking, servicing, repair, removal, installation and troubleshooting of turbine engines and systems. Detailed study of the lubrication system and inspection procedures to insure conformity with FAA specifications and standards are included. (Sp, Su)

AVPP 263 Turbine Engine Systems 2**Prerequisite:** Department Approval

This course is a detailed study of turbine-engine ignition, pneumatic and electric starters, exhaust and thrust reverser, fire detection and protection, fuel metering and electronic fuel control systems and components. Study also includes inspection, checking, servicing, repair and troubleshooting procedures. (Su)

AVPP 265 Powerplant Instruments 2**Prerequisite:** Department Approval

This course covers the inspection and repair of turbine and reciprocating engine instruments. Troubleshooting of mechanical/electrical fluid rate-of-flow, temperature, pressure, RPM and airflow indicators will be included. (Sp, Su)

AVPP 267 National Powerplant Cert Proc 1**Prerequisite:** Department Approval

Study of the Federal Aviation Regulations pertaining to national certification as a licensed powerplant mechanic. Includes testing in all required areas of study as a prerequisite to receiving authorization to take the powerplant national certification tests administered by representatives of the Federal Aviation Administration. (Sp, Su)

AVST - Aviation Simulator Training**AVST 211 Flight Simulator I 1****Prerequisite:** Department Approval

Provides flight simulator and ground training to develop student's basic attitude instrument flying skills. Course is intended to be taken concurrently with AVST 201. Simulator used is GAT-I (or other approved simulator.) (F, Sp, Su)

AVST 212 Flight Simulator II 1**Prerequisite:** Department Approval

Provides flight simulator and ground training to develop student's skills in IFR navigation and ATC procedures in terminal environment. This course is intended to be taken concurrently with AVFT 202. Simulator used is GAT-I (or other approved simulator). (F, Sp, Su)

AVST 213 Flight Simulator III 1**Prerequisite:** Department Approval

Provides flight simulator and ground training to further develop the student's skills at IFR navigation and ATC procedures in en route and terminal environments. This course is intended to be taken concurrently with AVFT 203. Simulator used is GAT-I (or other approved simulator). (F, Sp, Su)

AVST 214 Flight Simulator IV 1**Prerequisite:** Department Approval

Provides flight simulator and ground training to develop student skills to the level of instrument rating practical test standards. Student will perform simulated flights in en route and terminal environments, including compliance with emergency procedures. This course is intended to be taken concurrently with AVFT 204. Simulator used is GAT-I (or other approved simulator). (F, Sp, Su)

AVST 215 Multi-Engine Flight Simulator 1**Prerequisite:** Department Approval

Provides flight simulator training culminating in aeronautical knowledge and maneuvering skills in support of advanced visual and instrument flight training in multi-engine aircraft. Intended for the Flightmatic multi-engine simulator. (F, Sp, Su)

BDCS - Business Development Seminars**BDCS 201 Starting a Business .5****Prerequisite:** None

Entrepreneurs are usually required to wear many "hats" and may have no idea what skills and processes are involved in starting and operating a business. If you decide that owning a business is feasible, this class can help you find assistance to begin and maintain a business. (F, Sp, Su)

BDCS 202 Success Strategies Oper Sm Bus .5**Prerequisite:** None

This seminar, presented by a successful business person, can save you both problems and money. What to avoid! What to look out for! Where to seek help! Where to cut costs! How to help ensure your chances of a successful business venture! Come and learn from those who can help. (F, Sp, Su)

BDCS 205 Systems for Record Keeping .5**Prerequisite:** None

This seminar increases the participants' working knowledge of the accounting process and the maintenance of accounting records, ledgers, and income statements, and the preparation for income tax time. (F, Sp, Su)

BDCS 209 Finan Mgmt for Sm Business .5**Prerequisite:** None

This seminar offers practical presentation, application, and practice of basic financial management techniques, such as analyzing and applying information from balance sheets, income statement, and cash flow statements. (F, Sp, Su)

BDCS 210 Customer Relations .5**Prerequisite:** None

Anyone who sells, greets, or provides services to customers can discover new ways for creating good customer relations. By communicating effectively, understanding customer personalities and how to deal with them, and assessing their own motivation and esteem needs, participants can serve their customers in a positive manner. (F, Sp, Su)

BDCS 211 Advertising for Small Business .5**Prerequisite:** None

This seminar will teach how to plan, create, select, and evaluate advertising. Entrepreneurs can learn to develop an advertising plan that is unique to the special needs of their organizations. (F, Sp, Su)

BDCS 215 Developing a Marketing Plan .5**Prerequisite:** None

This seminar familiarizes participants with marketing and provides an opportunity to write a marketing plan. Participants will learn to use a six-step process that involves obtaining data, developing the plan, and analyzing the results. (F, Sp, Su)

BDCS 225 Writing a Business Plan 0.5**Prerequisite:** None

Participants can expect to become familiar with business planning and how to develop and maintain a business plan. Most creditors require a business plan before reviewing a loan application. Be prepared. Write your business plan with the information provided at this seminar. (F, Sp, Su)

BDCS 230 Small Business Taxes .75**Prerequisite:** None

Federal, state and local governments assess a variety of taxes on business. This seminar will identify the various taxes which pertain to small businesses in Michigan and provide information on the tax returns used and filing responsibilities of the business. (F, Sp, Su)

BIOL - Biology**BIOL 120 Environmental Science** 4**Prerequisite:** Reading Level 5 and Writing Level 6

Students will develop an ecological knowledge base to allow them to understand how human actions impact the environment. They will develop applied analytical skills through laboratories, fieldwork, simulations and a discussion of contemporary issues. They will investigate and evaluate basic ecological and environmental issues. (F, Sp, Su)

BIOL 121 Biol Foundation for Physiology 4**Prerequisite:** Reading Level 5 and Writing Level 6 and Math Level 4**Recommended:** CHEM 120 or High School Chemistry

Topics include atomic structure, chemical bonding, organic molecules, biological molecules, enzymes, metabolism, cell structure and function, passage of materials across membranes, harvesting energy, mitosis, meiosis, and the relationship between DNA, RNA, and protein synthesis. Recommended prerequisite for PHGY 202. (F, Sp, Su)

BIOL 127 Organismal Biology 4**Prerequisite:** Reading Level 5 and Writing Level 6 and Math Level 4**Recommended:** CHEM 120 or CHEM 125 or High School Chemistry

Lecture topics include chemistry of carbohydrates, lipids and proteins; structure and function of prokaryotic and eukaryotic cells; biochemistry of respiration and photosynthesis; and genetics and the regulation of gene expression. Laboratory stresses techniques of cell and molecular biology as well as genetics. (F, Sp, Su)

BIOL 128 Organismal Biology 4**Prerequisite:** Reading Level 5 and Writing Level 6 and Math Level 4

This course examines adaptations of organisms to changing environments. Major emphasis is on physiological adaptations, natural selection, ethology, and ecology. Aquatic systems are examined in the laboratory; sampling techniques and statistical methods are used to analyze a local river. (F, Sp, Su)

BIOL 145 Introductory Anat & Physiology 4**Prerequisite:** Reading Level 5 and Writing Level 6

An introductory course in human anatomy and physiology which combines lecture and laboratory experiences to provide a basic understanding of the structure and function of body systems. Designed for vocational programs, that include emergency medical technicians, massage therapists, medical technicians, and medical transcriptionists, as well as for non-science majors. (F, Sp, Su)

BIOL 201 Human Anatomy 4**Prerequisite:** Reading Level 5 and Writing Level 6**Recommended:** BIOL 121 or BIOL 127 and Chemistry

A study of the anatomy of the human body that includes the structures of the skeletal, muscular, nervous, sensory, circulatory, respiratory, digestive, excretory, endocrine, and reproductive systems. (F, Sp, Su)

BIOL 202 Human Physiology 4**Prerequisite:** BIOL 201 2.0 minimum (previously ANAT 201) and Reading Level 5 and Writing Level 6**Recommended:** BIOL 121 and Chemistry

The physiology, regulation, and biochemistry of the various organ systems in the human body are presented along with the integration of body function. Emphasis is on normal function, but clinical aspects may be discussed when appropriate. Laboratory topics complement the lecture. (F, Sp, Su)

BIOL 203 Microbiology 3**Prerequisite:** Reading Level 5 and Writing Level 6 and Math Level 4**Recommended:** BIOL 121 or BIOL 127 and Chemistry

An introduction to bacteria, viruses, and other microorganisms as they relate to human health. Emphasis on bacterial and viral structure, life cycles, and genetics; antimicrobial therapy; immunology and host defenses; and the epidemiology, treatment, and prevention of selected infectious human diseases. (F, Sp, Su)

BIOL 204 Microbiology Laboratory 1**Prerequisite:** BIOL 203 2.0 minimum or Concurrently (previously MICR 203)

Basic laboratory principles of microbiology for allied health students. Emphasis on microscopy, aseptic cultivation of microorganisms, differential staining, assays of antimicrobial agents, and diagnostic laboratory techniques. Students will identify unknown bacterial species and examine medically important parasites. (F, Sp, Su)

BIOL 210 Natural Resource Conservation 4**Prerequisite:** Reading Level 5 and Writing Level 6

This course examines the renewable natural resources and the policies which govern their use in the United States. Laboratory investigations include measurement techniques, land use evaluations, and environmental problem solving. These exercises will be oriented toward the completion of an environmental impact assessment covering a current local environmental situation. (F, Sp, Su)

BIOL 260 Botany 4**Prerequisite:** Reading Level 5 and Writing Level 6**Recommended:** One semester of College-level Biology

An introduction to the study of plants that includes structure and function, development, and ecology. Emphasis will be placed on the diversity, adaptations, and life cycles of major plant groups. Laboratory will complement the basic concepts with emphasis on physiology, systematics, and species of value to medicine and agriculture. (F)

BIOL 265 Zoology 4**Prerequisite:** Reading Level 5 and Writing Level 6 and Math Level 4**Recommended:** One semester of College-level Biology

Topics include principles of taxonomy; early animal development; the diversity of animal body plans; and protozoan biology. Course deals principally with taxonomy, early development, and comparative anatomy of members within the animal phyla and classes. Groups are surveyed in a phylogenetic approach. (Sp)

BIOL 270 Human Genetics 3**Prerequisite:** Reading Level 5 and Writing Level 6 and Math Level 5**Recommended:** BIOL 121 or Equivalent

Presents general principles of genetics with specific human application. Topics include Mendelian genetics, mitosis and meiosis, chromosome structure and aberrations, sex determination and x-linkage, molecular basis of inheritance, gene mutations, genetics of immune system, cancer genes, recombinant DNA technology, and genetic screening and counseling. (Sp)

BIOL 275 Molecular Biology I 4**Prerequisite:** BIOL 127 2.0 minimum and CHEM 151 2.0 minimum and CHEM 161 2.0 minimum and Reading Level 5 and Writing Level 6 and Math Level 4

Introduces basic principles of molecular biology, DNA/RNA structure, function and replication, Polymerase Chain Reaction, and recombinant DNA technology. Laboratory emphasizes reagent preparation, culturing bacteria, isolating and purifying both bacterial and plasmid DNA, restriction enzyme digests of DNA, and agarose gel electrophoresis analysis of DNA. Field trip to research laboratories. (F)

BIOL 276 Molecular Biology II 4

Prerequisite: BIOL 275 2.0 minimum and Reading Level 5 and Writing Level 6 and Math Level 4

Continuation of BIOL 275. Advanced lecture topics in bacteriophage biology, gene analysis, gene sequencing, and applications of molecular biotechnology. Gene cloning experiments with lambda bacteriophage and plasmid vectors, Southern hybridizations, and construction of a genomic library of lambda phage DNA. (Sp)

BIOL 285 Biology in the Tropics 2

Prerequisite: Reading Level 5 and Writing Level 6 and Math Level 4

A field experience to study tropical ecosystems in Costa Rica. An eight week lecture series on tropical biology will culminate with a ten day visit to various ecosystems in Costa Rica. Individual writing projects emphasizing evolutionary and ecological concepts will be conducted in the field. (Sp)

BIOL 287 Tropical Aquatic Systems 3

Prerequisite: Reading Level 5 and Writing Level 6 and Math Level 4

Recommended: College level biology or chemistry

This course combines a classroom lecture series with a 10-day field study in Puerto Rico. Students will study tropical aquatic systems including forested streams, tide pools, urban waterways, and coral reefs. Evaluation will be based on lecture tests, journals, and the development and completion of individual research projects. (F)

BLDR - Building Related**BLDR 110 Wood Projects** 1.5

Prerequisite: None

Recommended: Previous Woodworking Experience

This class is designed to offer students a shop in which to work on individual woodworking projects. All of the tools and equipment in the shop are available for student use. The instructor demonstrates uses of tools/equipment and consults with students on their individual projects. (F, Sp)

BLDR 112 Wood Projects Lab .75

Prerequisite: None

Recommended: Previous Woodworking Experience

This class is designed to offer students the opportunity to work on their own woodworking projects. The tools and equipment in the shop are available for student use. The instructor is available to help with the use of tools and to assist with their projects. (Su)

BLDR 144 Build Your Own Home 1.5

Prerequisite: None

This course is designed for students who wish to build their own homes. Included are design considerations, land acquisition, selection of materials, choosing contractors, scheduling of work, financing, and landscaping. Guest speakers, who are experts in their various fields, provide the instruction. (F, Sp, Su)

BLDT - Building Trades**BLDT 100 Introduction to Construction** 3

Prerequisite: None

This course covers basic concepts of construction; including city and regional planning, managing, contracting, designing, engineering, estimating, bidding and inspecting; as well as the production work normally associated with construction. (F)

BLDT 101 Basic Woodworking 2

Prerequisite: None

Students learn about wood characteristics, hand and portable power tools, wood-working machinery, joint construction, fastening methods, woodworking techniques and procedures, and technical information to be applied to student-made projects. (F, Sp)

BLDT 103 Structural Blueprint Reading 4

Prerequisite: None

This course covers symbols, conventions and abbreviations used in structural blueprints. The student will be able to recognize conventions and verbally describe their interpretation in trade or lay terms according to standard architectural practices. Residential and commercial prints are used to show the relationship between working drawings and specifications. (F, Sp, Su)

BLDT 121 Residential Framing 4

Prerequisite: None

Students will learn to frame residential buildings using accepted framing techniques; such as framing member spacing, framing floor systems, interior and exterior walls, ceilings, roofs and stairs. Various types of foundations and the advantages and disadvantages of each are covered. Hands-on methods are used. (F, Sp)

BLDT 124 Remodeling, Shingling/Siding 4

Prerequisite: BLDT 121 1.0 minimum or Concurrently

Students will learn to remodel, shingle and side a residential building. This course covers the analysis, designing, estimating, problem solving, building practices, materials and installation methods for remodeling, roofing and exterior wall covering projects. (Sp)

BLDT 126 Interior Carpentry 4

Prerequisite: BLDT 121 1.0 minimum or Concurrently

Students will learn to finish the interior of a residential building. This course covers the materials, installation practices and material takeoff to do the finish carpentry for a house to include windows, doors, base, chair rail, wood floors, stairs, simple built-ins and cabinets. (F)

BLDT 132 General Home Maintenance 2

Prerequisite: None

This is an introductory course in general home maintenance. Areas to be covered will include basic tools, electrical, plumbing, framing, roofing, interior trim, drywall and painting, appliance maintenance and repair, and concrete flatwork and block-laying. (F, Sp)

BLDT 262 Builder's Business License 4

Prerequisite: None

This course covers the principles of residential builder organizations and business practices, along with other useful information to help students pass the State of Michigan Builder's License Exam. Preparation for a residential project from planning to actual construction and sale of the project is covered. (Sp)

BLDT 277 Construction Cost Estimating 4

Prerequisite: (BLDT 103 1.0 minimum or ARCH 101 1.0 minimum) or Concurrently

Students will learn to do a structural material takeoff and a complete estimate for residential and light commercial buildings. The course uses standard estimating practices to estimate the cost of buildings based on detailed blueprints. (F, Sp)

BLDT 281 International Building Code 3

Prerequisite: None

Students will be introduced to the International Building Code. This course will emphasize the interpretation and application of the International Building Code. Requirements for materials, barrier-free design and fire standards for residential and commercial construction will also be emphasized. (F, Sp)

BLDT 285 Residential Building Intern 2

Prerequisite: BLDT 121 1.0 minimum and Department Approval

Restriction: Residential Building Majors

This course offers students the opportunity to work for a residential builder in an actual job situation. The students can gain experience working with tools used in the industry and applying what they learned in the classroom and laboratory. (F, Sp, Su)

BLDT 296 Ceramic Tile Seminar .5

Prerequisite: None

This seminar will teach the basic principles for installation of ceramic tile. This includes the selection of types of tile, how to lay out the tile, preparation of the surface, care of tools used, and estimation of labor and materials. (F, Sp)

BLDT 298 Builder's License Review 1

Prerequisite: None

This is a two-day workshop designed to prepare individuals for the State of Michigan Residential Builder's Examination. This workshop will include concentrated instruction in blueprint reading, state regulations, building terms, basic math, and construction codes. (F, Sp, Su)

BUSN - Business**BUSN 118 Introduction to Business 3****Prerequisite:** Reading Level 5

Introduces students to principles, problems, and practices related to the world of business. Topics covered include business management and organization, marketing, finance, economics, production, and international business. (F, Sp, Su)

BUSN 191 Independent Study/Business 1-3**Prerequisite:** Department Approval

Students are allowed to undertake special research projects and/or individual readings to apply personal and professional experience to academic area of interest. Minimum of 16 hours work per credit required, plus completion of written project report. (F, Sp, Su)

BUSN 201 International Business 3**Prerequisite:** None**Recommended:** BUSN 118

Overview of international business: organizational, social, cultural, and economic variables that create change in the international marketplace. Includes exchange rates, resource allocation, import quotas and export controls, balance of payments, and free trade versus protectionism. (F, Sp, Su)

BUSN 250 Personal Finance 3**Prerequisite:** None

Provides a broad survey of topics including budgeting, smart shopping, buying a car, renting, buying or selling a home, credit requirements, investing, insurance, and estate and retirement planning. Not intended to be a financial planning course, but students will develop a fundamental knowledge of financial concerns. (F, Sp)

BUSN 251 Stock Market Essentials 3**Prerequisite:** None

Study of securities market to give framework with which to set investment goals and achieve desired results. Introduction to some of the more prevalent theories, concepts, and skills to aid in developing strategies and making sound investment decisions related to the stock market. (F, Sp)

BUSN 254 Introduction to Investments 2**Prerequisite:** None

This course covers the fundamental principles of investing and its role in our economy. Emphasis will be on developing terminology, types of investments, and personal financial planning such as mutual funds, real estate, CDs, money market funds, limited partnerships, insurance, IRAs, stock, and tax shelters. This is an overview course. (F, Sp)

BUSN 295 Small Business Management 3**Prerequisite:** None

Small business operations, including business and managerial functions, principles of management, environment of small business, financial, marketing, production management, and legal and governmental relationships. Development of a small business plan is required. (F, Sp)

CABS - Computer Applications Using Business Software**CABS 100 Computer Related Seminars .25-1****Prerequisite:** None

This series of seminars provides the successful participant with operational proficiency in using specific microcomputer software. The seminars also provide the students with some experience using commands, functions, and features of the software beyond the basic level. Extensive hands-on activity is the primary method used in learning. (F, Sp, Su)

CABS 101 Begin Keyboarding on Computer 2**Prerequisite:** None

This course is designed for students having no previous typing experience. Basic keyboarding skills using the touch method are developed. Emphasis is on correct finger usage, developing speed and accuracy using the alphabetic keyboard, number and symbol keys. Basic speed level of 20-35 is developed (F, Sp, Su)

CABS 102 Microcomputers for Non-Majors 2**Prerequisite:** None

Surveys concepts and uses of software applications: word processors, spreadsheets, and database managers. Terminology, problem solving, and acquisition factors associated with personal computers are discussed. Hands-on computer use. (F, Sp, Su)

CABS 104 Skillbuilding for Computers 2**Prerequisite:** None**Recommended:** Previous Keyboarding

This course is designed to develop speed and accuracy at the keyboard. Students need to know the alphabetic key locations prior to taking this class. A net speed of 25 words per minute on a three-minute timing is recommended. (F, Sp)

CABS 110 Microsoft Office 3**Prerequisite:** None**Recommended:** Windows 95 and Keyboard Experience

This course provides an introduction to MS Office. It is designed to develop basic operational proficiency while using MS Office (MS Word, MS Excel, MS Access, and MS PowerPoint). Students learn how to use word processing, spreadsheet, database, and presentation software. Topics include creating letters, memos, simple spreadsheets, database structures, and desktop presentations. (F, Sp, Su)

CABS 113 Microsoft Word Office/Int Key 4**Prerequisite:** None**Recommended:** Typing Minimum 35 wpm

In addition to building speed and accuracy on the computer, this course is designed to develop a basic word processing skill on the microcomputer using Microsoft Word software for the rapid production, revision, and retrieval of routine business documents such as letters, envelopes, memorandums, tables, reports, short manuscripts, and repetitive correspondence. (F, Sp, Su)

CABS 118 Adv Microsoft Word for Office 4**Prerequisite:** None**Recommended:** CABS 113 2.0 minimum or Equivalent

In addition to building speed and accuracy on the computer, this course is designed to develop advanced word processing skill on the microcomputer using Microsoft Word software. Topics covered will include merging documents; creating and formatting tables; inserting clip art and WordArt; creating fill-in forms, newsletters and other specialized documents. (F, Sp)

CABS 119 Word for Windows 2**Prerequisite:** None**Recommended:** Windows 95 and Keyboard Experience

This course is designed to provide the person new to the Word for Windows program with the ability to perform the most common word processing functions. The course also covers less frequently used features, such as creating tables and outlines. (F, Sp, Su)

CABS 121 WordPerfect for Windows 2**Prerequisite:** None**Recommended:** Windows 95 and Keyboard Experience

Provides instruction in the use of WordPerfect for Windows. Topics include creating, editing, formatting, and storing word processing documents. Also taught are the use of the block technique, spell-checker, thesaurus, merge feature for form letters, and other related skills. (F, Sp, Su)

CABS 126 Excel 2**Prerequisite:** None**Recommended:** Windows 95 and Keyboard Experience

Beginner-level training in the creating of spreadsheets and databases using the Microsoft Excel program. The instruction includes the manipulation and generation of reports, tables, and graphs. Also included is instruction in file handling, disk management, and macro creation and use. (F, Sp, Su)

CABS 128 Lotus 1-2-3 for Windows 2**Prerequisite:** None**Recommended:** Windows 95 and Keyboard Experience

Provides an introduction to the spreadsheet program Lotus 1-2-3 for Windows. Students develop a working knowledge of the program and the ability to apply Lotus to routine business problems through hands-on activities. Topics include creating, modifying and enhancing a worksheet; graphing information; using databases; creating macros; and using multiple worksheets. (Sp)

CABS 129 Excel-Advanced 2**Prerequisite:** CABS 126 2.0 minimum

Advanced-level training in the creating of spreadsheets and databases using the Microsoft Excel program. The instruction includes the manipulation and generation of reports, tables, and graphs. (F, Sp, Su)

<p>CABS 133 Microsoft Access Database 2</p> <p>Prerequisite: None Recommended: Windows 95 and Keyboard Experience</p> <p>This course provides introductory through intermediate level training in the creation of database management systems using Microsoft Access. Instruction includes an introduction to Microsoft Access, database creation and maintenance, database querying, the generation of custom forms and reports, and integration of access with other programs. (F, Sp, Su)</p>	<p>CABS 234 Programming Microsoft Access 2</p> <p>Prerequisite: CISB 114 2.0 minimum or CISB 119 2.0 minimum</p> <p>Advanced-level database management for the Access user who already has a knowledge of databases and the basic objects of an Access database such as tables, queries, forms and reports, but now wants to learn how to program with Visual Basic for Applications to endow application with a professional and intelligent interface. This course is designed for advanced users of Microsoft Access that are interested in using Visual Basic for Applications to program intelligent visual interface objects and automate database processes. (F, Sp)</p>
<p>CABS 179 Microsoft Outlook 2</p> <p>Prerequisite: None Recommended: Windows 95 and Keyboard Experience</p> <p>Students will learn to use Outlook to manage typical business office communication needs. The course includes setting up the Outlook desktop information system, creating contacts, managing calendars and scheduling appointments. Students will also configure tasks, record journal entries and notes, organize and archive data, integrate Outlook with other Office applications. This course will prepare students for the Microsoft Outlook Office User Specialist (MOUS) Certification Exam. (F, Sp)</p>	<p style="background-color: #cccccc; padding: 2px;">CADD Computer Aided Drafting and Design</p> <p>CADD 100 Basic Mechanical Drafting 3</p> <p>Prerequisite: None</p> <p>This course teaches the fundamental concepts of drafting and design using sketches and manual drafting skills. The student will learn the basics of orthographic projection, lettering, sketching, dimensioning techniques, and much more. (F, Sp, Su)</p>
<p>CABS 180 Desktop Publishing PageMaker 3</p> <p>Prerequisite: None Recommended: Windows 95 and Keyboard Experience</p> <p>This course provides experience in producing documents with text and graphics using the desktop publishing program PageMaker. Good design of documents is emphasized in addition to the mechanics of producing the document. The basics of publishing are also discussed. Documents produced include reports, flyers, and newsletters. (F, Sp, Su)</p>	<p>CADD 101 Mechanical Drafting/Basic CAD 4</p> <p>Prerequisite: (CADD 100 2.5 minimum or DTDS 100 2.5 minimum or Drafting Placement Test 80%) and Reading Level 3 and Writing Level 2 and Math Level 4</p> <p>This is an introductory course in mechanical drafting and CAD concepts. Instruction includes orthographic projection, auxiliary views, sections, dimensioning techniques, computer hardware setup, Windows NT, file management, printing, and secondary auxiliary view projections. Students will complete a series of drawings to demonstrate understanding of the concepts presented. (F, Sp, Su)</p>
<p>CABS 182 Microsoft PowerPoint/Windows 2</p> <p>Prerequisite: None Recommended: Windows 95 and Keyboard Experience</p> <p>This course introduces students to the basic features of Microsoft PowerPoint. Major topics include creating presentations with AutoLayouts and Design Templates, using embedding objects and animation effects to enhance a presentation. Students will create interactive presentations with links to other applications and also learn how to share presentations with others on the World Wide Web. (F, Sp, Su)</p>	<p>CADD 102 Advanced Mechanical Drafting 4</p> <p>Prerequisite: CADD 101 2.5 minimum or DTDS 101 2.5 minimum</p> <p>This course covers advanced drafting and design techniques needed to project successive auxiliary views from various orthographic views. Layout and design concepts will also be stressed. Students will complete practical design projects in problem solving and creativity applicable to the automotive, industrial, and/or aerospace industries. (F, Sp, Su)</p>
<p>CABS 195 Microsoft Windows 2</p> <p>Prerequisite: None</p> <p>This course is designed to provide students with a broad base of knowledge that is necessary for enhancing PC productivity through the efficient and effective utilization of Microsoft Windows for file, application, and system, use and management. It serves as an excellent introductory course or comprehensive course that fills in the gaps for intermediate users of the operating system. Topics include the use of Windows Interface Objects, Utilities, Help features, Multimedia features, internet features, closely related applications, and Applets (Windows 98). (F, Sp, Su)</p>	<p>CADD 103 Geometric Dimension/Tolerance 3</p> <p>Prerequisite: CADD 100 2.5 minimum or DTDS 100 2.5 minimum or Drafting Placement Test 80%</p> <p>This course covers the principles and methods of dimensioning and tolerancing for specific design requirements on engineering drawings. Uniform practices for stating and interpreting these requirements will be stressed. Content includes use and understanding of the symbolic method of specification relating to tolerances being applied using ASME/ANSI M14.5Y 1994 standards. (F, Sp)</p>
<p>CABS 210 Advanced Microsoft Office 3</p> <p>Prerequisite: CABS 110 2.0 minimum</p> <p>A sequel to CABS 110, this course provides advanced instruction in Microsoft Office Professional. Designed to develop advanced skills using MS Word, MS Excel, MS Access, and MS PowerPoint. This class uses extensive hands-on activity. (F, Sp)</p>	<p>CADD 104 Descriptive Geometry 4</p> <p>Prerequisite: CADD 101 2.5 minimum or DTDS 101 2.5 minimum</p> <p>This course covers the solution of space problems through the practice of advanced orthographic projection. Content includes points, lines and planes, parallelism, perpendicularity, developments, and intersections. Students will complete projects relating to architectural, civil, and industrial engineering situations. (F, Sp)</p>
<p>CABS 219 Advanced Microsoft Word 2</p> <p>Prerequisite: None Recommended: CABS 119</p> <p>Advanced-level training in word processing using the Microsoft Word program. The instruction includes footnotes, tables, using and defining styles, using graphics, creating forms, and advanced font and text formatting. (F, Sp, Su)</p>	<p>CADD 110 Industrial Blueprint Reading 3</p> <p>Prerequisite: CADD 100 2.5 minimum or DTDS 100 2.5 minimum or Drafting Placement Test 80%</p> <p>This course covers basic concepts in orthographic projection, with emphasis on interpretation of engineering drawings. Areas also covered include measurement systems, technical sketching, dimensioning, sectional and auxiliary views, and tolerancing. (F, Sp)</p>
<p>CABS 232 Advanced Microsoft Access 2</p> <p>Prerequisite: CABS 133 2.0 minimum Recommended: CABS 195 or Equivalent</p> <p>This course provides advanced level training in the creation of database management systems using Microsoft Access. Instruction includes working with web-enabled information, advanced custom reports and forms, advanced queries, advanced relationships, macros, switchboards, and introductions to the use of SQL and Visual Basic for Applications Code within Access. (F, Sp)</p>	<p>CADD 131 AutoCAD Basic 2-D 4</p> <p>Prerequisite: CADD 101 2.5 minimum or DTDS 101 2.5 minimum</p> <p>This course gives an introduction to AutoCAD software. Creation of 2-D multiview mechanical drawings with dimensions and notes will be the main focus. Use of AutoCAD's layer, block, plot commands, and isometric views will also be covered in this course. (F, Sp, Su)</p>
	<p>CADD 232 AutoCAD Advanced 3-D 4</p> <p>Prerequisite: CADD 131 2.5 minimum or DTDS 131 2.5 minimum</p> <p>This course builds on the material covered in CADD 131. The student will focus on advanced AutoCAD commands and features, including tools for 3-D drafting and design, 3-D design visualization and program customization. Topics covered include constructing 3-D wireframe and surface modeling, solid modeling, customized toolbars, system variables, and much more. (F, Sp)</p>

CADD 233 Autodesk Mechanical Desktop	4
Prerequisite: CADD 232 2.5 minimum or DTDS 132 2.5 minimum	
This course teaches the student how to generate 3-D parametric models, produce 2-D views and assemble parts while focusing on Autodesk Mechanical Desktop's designer and assembly modules. (F, Sp)	
CADD 234 Autodesk Inventor	4
Prerequisite: CADD 232 2.5 minimum or DTDS 132 2.5 minimum	
Upon successful completion of this course the student will be able to create part and assembly models and document those designs with drawing views. Students will use Autodesk Inventor to create features used to create, edit, document, and print parts and assemblies. The student will also learn how to make use of Inventor's Design Support System (DSS) to find solutions to design problems. (F, Sp)	
CADD 242 Unigraphics Basic	4
Prerequisite: CADD 131 2.5 minimum or DTDS 131 2.5 minimum	
This is the first of a two-semester course sequence that covers the fundamentals of the Unigraphics System of interactive design. This course covers Comprehensive CAD concepts of 2-D and 3-D construction and basic solid modeling, as well as some of the concepts of drafting. Prior CAD system experience is required. (F, Sp)	
CADD 243 Unigraphics Advanced	4
Prerequisite: (CADD 103 2.5 minimum or DTDS 103 2.5 minimum) and (CADD 242 2.5 minimum or DTDS 181 2.5 minimum)	
This is the second of a two-semester course sequence that covers the design and construction of sophisticated solid models of complex assemblies and components, and the production of dimensioned and toleranced engineering drawings of those components. Advanced concepts of Unigraphics modeling will be discussed and utilized in class projects. (F, Sp)	
CADD 252 I-DEAS Parts Modeling	4
Prerequisite: CADD 101 2.5 minimum or DTDS 101 2.5 minimum or Concurrently	
This course teaches the student I-DEAS Master Series CAD software emphasizing important concepts of feature-based parametric solid modeling. Students will construct and edit 3-D parts, use drafting and solid modeling features, create sketches and primitives, use feature relationships, use reference geometry, use a 3-D and solid model library of parts, and construct complete 2-D drawings. (F, Sp, Su)	
CADD 253 I-DEAS Assembly Modeling	4
Prerequisite: CADD 252 2.5 minimum or DTDS 155 2.5 minimum	
Students will learn how to use I-DEAS Master Series Assembly CAD software to create, edit, and constrain feature-based assembly models. Students will then be able to create assembly layout drawings from their solid models. (F, Sp, Su)	
CADD 282 Die Design and Construction	4
Prerequisite: (CADD 232 2.5 minimum or DTDS 132 2.5 minimum) or (CADD 242 2.5 minimum or DTDS 181 2.5 minimum)	
This course will emphasize the proper steps to designing a die, the ability to read sheet metal die design layouts, tolerancing and clearance fits as they apply to this area of learning. Also covered will be the names of various die components and students will be expected to understand and explain their workings. (F, Sp)	
CADD 284 Jigs and Fixture Design	4
Prerequisite: (CADD 232 2.5 minimum or DTDS 132 2.5 minimum) or (CADD 242 2.5 minimum or DTDS 181 2.5 minimum)	
Detailing techniques and dimensioning will be emphasized through the development of working drawings. These drawings will be extracted from a design concept or assembly type drawing. Familiarization with standard components will also be stressed. Students will be responsible for being familiar with and understanding various jig and fixture components. (F, Sp)	
CADD 290 Mechanical Drafting Lab	1-4
Prerequisite: Department Approval	
This course is intended to give the advanced drafting and design student an opportunity for more manual drafting experience through mutual agreement between student and instructor. Students will complete advanced projects and research in a variety of design application situations. (F, Sp)	
CADD 295 CADD Project Lab	1-4
Prerequisite: Department Approval	
This course is intended to give advanced drafting and design students an opportunity, through mutual agreement between student and instructor, to complete project(s) on one of several available CAD systems. (F, Sp)	

CHCE - Continuing Health Careers

CHCE 106 Cardiac Dysrhythmia Interpreta	2.75
Prerequisite: None	
This course introduces the student to identification of common dysrhythmias seen on a monitor or telemetry unit. Content will include criteria, causes, hemodynamic effects, and treatment of dysrhythmias according to ACLS guidelines. Use of monitoring equipment is integrated within the course content. (F, Sp, Su)	
CHCE 114 Phys Asses Skill fr Nrs Prctc	1.75-2.5
Prerequisite: None	
This course is designed for nurses in any area of practice. Emphasis is on techniques of physical examination: inspection, palpation, percussion, and auscultation. History taking and interpretation of physical findings are stressed. All major body systems are studied. Live models are used in supervised practice sessions. All equipment supplied. (F, Sp, Su)	
CHCE 115 Physical Assessment Refresher	.5
Prerequisite: None	
This seminar is designed for students who have already had formal training in physical examination skills. Course content is designed to help students recall important signs of pathology and normal physical findings. There is also ample opportunity, through supervised practice sessions, to improve specific techniques of physical examination. (F, Sp, Su)	
CHCE 185 Lab Tests for Nurses	.5
Prerequisite: None	
A seminar for nurses and other health care personnel. Seminar content focuses on the systematic disease processes of specific lab tests, interpretation of test values, and application to practice. Mock lab reports and case study situations are used. (F, Sp)	
CHCE 205 Intravenous Therapy	.5
Prerequisite: None	
This workshop will provide the most recent information on a variety of topics relating to intravenous therapy. Content can range from basic principles to advanced high-tech therapy. This seminar is designed for professional members of the health care team who routinely deal with IV therapy. (F, Sp)	
CHCE 210 PALS Training	1
Prerequisite: None	
This seminar is designed for members of the health care team who work with pediatric patients. A combination of lecture and practice in skills stations will prepare the student for success in achieving American Heart Association certification as a Pediatric Advanced Life Support Provider. Prior assigned reading mandatory. (F, Sp, Su)	
CHCE 211 PALS Refresher	.5
Prerequisite: None	
This seminar is designed to recertify, according to the American Heart Association (AHA) standards, those professionals currently possessing valid Pediatric Advanced Life Support (PALS) certification cards. Upon successful recertification, the AHA will issue each student a new PALS certification card. Prior assigned readings are mandatory. (F, Sp)	
CHCE 227 Health Related Seminars	.25-8
Prerequisite: None	
Seminar content is dependent upon course requirement. (F, Sp, Su)	
CHCE 230 ACLS Training Seminar	1
Prerequisite: None	
This seminar is designed for members of the health care team to develop knowledge and skills in Advanced Cardiac Life Support (ACLS). A combination of lecture and skills performance will prepare the student to achieve success in American Heart Association certification as an ACLS provider. Pre-preparation mandatory. (F, Sp, Su)	
CHCE 235 ACLS Refresher	.5
Prerequisite: None	
This seminar is designed to recertify, according to the American Heart Association standards, those individuals currently possessing valid Advanced Cardiac Life Support (ACLS) cards. The American Heart Association will issue a certificate to each student upon successful completion of the program. Prior assigned readings are mandatory. (F, Sp, Su)	

CHCE 299 ACLS Instructor Seminar	2	CHDV 130 Introduction to Child Care	1
Prerequisite: None This course will train those health care professionals who are currently certified in Advanced Cardiac Life Support (ACLS), according to American Heart Association standards, as ACLS instructors. All participants are expected to recertify their ACLS skills at the time of the course. Prior assigned readings are mandatory. (F, Sp, Su)		Prerequisite: None This course introduces factors in providing quality child care. Topics include program planning; curriculum development; child growth and development; positive guidance and discipline skills; safety, health and nutrition; parent communication and involvement; and professionalism. CDA functional area: learning environment, program management, and professionalism. (Sp)	
CHDV - Child Development			
CHDV 101 Child Growth/Devel: 0-5 Years	4	CHDV 131 Family Child Care Management	2
Prerequisite: Reading Level 5 and Writing Level 4 This course examines the growth and development patterns of children (prenatal to five years) in physical, social, emotional, cognitive, and language development. Additional topics include nutrition, health, play, families, and the preschool experience. Students acquire skills in observing, recording, and interpreting child behavior. CDA: developmental context; functional area: healthy. (F, Sp, Su)		Prerequisite: None This course presents a systematic approach to managing a family child care home and creating a positive learning environment for young children in a home setting. Topics include business aspects, program development, professionalism, managing personnel, and organizing the environment. CDA functional areas: learning environment, program management, professionalism. (F)	
CHDV 111 Child Guidance/Communication	4	CHDV 181 Problem Solving with Adults	1
Prerequisite: Reading Level 3 and Writing Level 4 This course, which includes field work, examines interaction skills and environmental structures which foster social and emotional growth in children. Topics include positive guidance and discipline, effective communication with children, problem solving, social skill development, group management, and aggression prevention. CDA functional areas: learning environment, self, social, guidance, communication, professionalism. (F, Sp)		Prerequisite: None Recommended: Experience in Child Care This course examines the child care provider's use of decision-making and problem-solving skills in challenging situations. Communication skills, values, priorities and conflict resolution will be introduced and practiced. Seminar format is used. (Sp)	
CHDV 112 Family Relationship/Child Care	2	CHDV 184 Children and Stress	1
Prerequisite: CHDV 111 2.5 minimum This course examines ways to establish and maintain positive and supportive relationships with families in child care programs. The focus includes understanding the parent's perspective, supporting the child's relationship with his or her family, encouraging parental involvement, and communicating with parents. CDA functional area: families. (F, Sp)		Prerequisite: None This course examines stress as it relates to children. Specific topics include symptoms and causes of stress; situations which are stressful for children, ways to help children cope with stress, and techniques for reducing stress. Specific information on divorce, death, family violence, and hospitalization are discussed. Seminar format is used. (Sp, Su)	
CHDV 113 Health/Safety Issue:Child Care	2	CHDV 185 Preventing Child Sexual Abuse	1
Prerequisite: None This course examines health and safety issues in child care homes and centers. Topics include understanding and preventing communicable illnesses, bloodborne pathogens, safe equipment and play areas, preventing accidents, nutrition, and health and safety education. It addresses the CDA competencies of safe and healthy. (F, Sp)		Prerequisite: None This course explores preventing child sexual abuse through teaching personal safety to children. Topics include the sexually abusive situation, behavioral indicators, appropriate adult responses, legal mandates, and reporting protocol. It emphasizes appropriate ways of teaching personal safety to children, selecting personal safety materials, and adult concerns when teaching it. Seminar format is used. (F)	
CHDV 120 Curriculum: Physical Dev	1	CHDV 186 Child Self-Esteem/Pos Discip	1
Prerequisite: None This course examines curriculum and activities which enhance the development of physical and motor skills of children in early childhood programs. It includes specific information on developmentally appropriate activities for fine motor, gross motor, and sensory development for a variety of ages. CDA functional area: physical. Uses seminar format. (Sp)		Prerequisite: None This course looks at children's self-esteem: what it is, where it comes from, and how it can be fostered in both homes and child care. It focuses on practical suggestions and teaches positive discipline techniques that build self-esteem. CDA functional area: self, guidance. Seminar format is used. (F, Su)	
CHDV 121 Curriculum: Cognitive/Lang	1	CHDV 188 Caring/Children/Special Needs	2
Prerequisite: None This course examines curriculum and activities which enhance cognitive and language development of children in early childhood programs. It focuses on designing developmentally appropriate activities which foster curiosity and exploration. Topics include math, science, language arts, and emergent literacy. CDA functional areas: cognitive and communication. Uses seminar format. (Su)		Prerequisite: None This course focuses on the special and diverse individual needs of children and their families, including handicapping conditions in various settings. It addresses identification of children with disabilities or in "at-risk" categories; community services; inclusion in least restrictive environments; family-centered intervention; and communication skills which enhance work with children with special needs and their families in various settings. (Sp)	
CHDV 122 Curriculum: Creative Dev	1	CHDV 189 Help Children Value Diversity	1
Prerequisite: None This course examines curriculum and activities which enhance the creative development of children in early childhood programs. Specific information on activities in the areas of art, music, creative, and dramatic play with a variety of materials are shared. (Su)		Prerequisite: None This course explores the various cultural groups and family structures that children encounter. It presents activities that caregivers can use to aid children in recognizing, valuing, and respecting diversity. Development of multi-cultural and anti-bias curriculum is emphasized. Seminar format is used. (F)	
CHDV 123 Curriculum: Early Literacy	1	CHDV 190 Child Care Seminars	.25-1
Prerequisite: None This course examines curriculum and activities which enhance the development of literacy in early childhood programs. The focus is on designing and implementing developmentally appropriate strategies, environments and activities that promote the acquisition of basic concepts about literacy and its functions for children five years of age and under. Topics include: oral language, emergent reading, emergent writing, classroom arrangement. (F)		Prerequisite: None This course provides a variety of topics of special interest to child care providers. (F, Sp)	
		CHDV 197 Child Developmnt Special Topics	1
		Prerequisite: None This course explores recently identified current issues, knowledge, skills and/or attitudes in the field of early childhood education and care. (F, Sp)	

CHDV 198 Child Developmnt Special Topics	2
Prerequisite: None	
This course explores recently identified current issues, knowledge, skills and/or attitudes in the field of early childhood education and care. (F, Sp)	
CHDV 220 Preschool Curric/Learning Env	4
Prerequisite: CHDV 101 2.0 minimum and CHDV 111 2.5 minimum	
This course, with field work, explores developmentally appropriate preschool programming which promotes physical, cognitive, language, and creative development. Emphasis is on active involvement of children in concrete experiences. Other topics include appropriate learning environments, materials and equipment, and children's learning objectives. CDA functional areas: learning environment; creative, physical, cognitive, and communication. (F, Sp)	
CHDV 221 Infant-Toddler Program Dev	4
Prerequisite: CHDV 101 2.0 minimum or Concurrently	
This course, which includes field work, explores physical and emotional environments needed for quality child care for infants and toddlers. Focus includes developing nurturing skills, developmentally appropriate activities and materials, managing schedules and routines, observation, and record keeping skills. CDA functional areas: safe, healthy, learning environment; physical, cognitive, communication; program management. (F, Su)	
CHDV 222 School-Age Child Care Prog Dev	2
Prerequisite: None	
This course examines the development of child care programs to meet the developmental characteristics of school-aged children (age 5-12). Content includes growth and development patterns in the areas of physical, cognitive, social and emotional; appropriate equipment and activities; environment and program structure; and individual and group management. (F, Sp)	
CHDV 230 Child Care Center Admin	2
Prerequisite: CHDV 220 2.5 minimum	
This course examines the administrator's role in directing an early childhood center and in providing a systematic approach to program management. Topics include goal-setting, safety, licensing, health and nutrition, policy development, business techniques, and personnel management. CDA functional areas: safe, program management, professionalism. (F, Sp)	
CHDV 251 CDA Credentialing Preparation	3
Prerequisite: CHDV 111 2.5 minimum and (CHDV 220 2.5 minimum or CHDV 221 2.0 minimum) and Department Approval	
This course, and accompanying field work, examines credentialing procedures and competency standards for the Child Development Associate (CDA) Credentialing Assessment. Students complete the resource file, are observed using the CDA observation instrument, and prepare for the CDA situational assessment. Content of the course covers the functional area of families and professionalism. (Sp)	
CHDV 252 CDA Completion	1
Prerequisite: CHDV 112 2.0 minimum and CHDV 220 2.5 minimum and (CHDV 284 2.0 minimum or Concurrently) and Department Approval	
This course is designed for associate degree candidates and allows them to complete the CDA assessment readiness requirements as part of the associate degree practicum. Resource file development, statements of competence, advisor observation, and assessment procedures are included. Taken concurrently with CHDV 284. (F)	
CHDV 284 Child Development Practicum	5
Prerequisite: CHDV 220 2.5 minimum and Reading Level 5 and Writing Level 6 and Department Approval	
A supervised field experience working directly with children in a child care program. Students gain skill in planning and implementing the daily children's program, and in setting and assessing goals for individual children and the classroom. Accompanying seminar explores the teacher's professional role in planning, goal-setting, and evaluation. (F, Sp)	
CHDV 297 Child Development Indep Study	1-3
Prerequisite: Department Approval	
This course includes special research, directed study, or service-learning projects in child development. It requires at least 16 hours of independent work for each credit. A learning contract specifying objectives, activities, and outcomes is required. (F, Sp, Su)	

CHEM—Chemistry

CHEM 120 Gen Organic & Biological Chem	4
Prerequisite: Reading Level 5 and Writing Level 4 and Math Level 4	
Introduces topics in general, organic, and biological chemistry that are used in health-related occupations. Included are scientific measurement, atomic structure and bonding, chemical equations and stoichiometry, solutions, acids, bases, buffers, gas behavior, nuclear radiation, organic functional groups, and the biologically important compounds: carbohydrates, lipids, and proteins. (F, Sp)	
CHEM 125 Basic Chemistry	4
Prerequisite: Reading Level 5 and Writing Level 4 and Math Level 4	
Recommended: Chemistry Inventory	
Intended for students who have not had high school chemistry or who require a refresher course. Measurement, problem solving, chemical formulas, chemical equations, stoichiometry, atomic structure, chemical bonding, gas laws, solutions, and acids and bases are emphasized. (F, Sp, Su)	
CHEM 130 Biochemistry	4
Prerequisite: Writing Level 4	
Recommended: CHEM 120 or CHEM 125 2.0 minimum	
This course is designed to provide an understanding of the chemistry of life processes. Topics include organic functional groups, enzymes, carbohydrates, lipids, proteins, metabolic pathways, nucleic acids, biochemical genetics, blood and respiratory chemistry, urine, electrolytes, acid-base balance, and hormones. (Sp, Su)	
CHEM 135 Chemistry in Society	4
Prerequisite: Reading Level 5 and Writing Level 4 and Math Level 4	
A general education course which presents chemistry to non-science majors who must function and make decisions in a society shaped by science and technology. Chemistry knowledge is introduced and applied on a need-to-know basis with respect to issues in society that have significant chemistry components. (F, Sp)	
CHEM 151 General Chemistry Lecture I	4
Prerequisite: Reading Level 5 and Writing Level 4 and Math Level 5	
Recommended: CHEM 125 2.0 minimum or High School Chemistry	
The first of two semester courses designed to provide an in-depth introduction to general chemistry for students who plan careers in the health professions, physical sciences, biological sciences, or engineering. Topics discussed include measurement, aqueous reactions, stoichiometry, thermochemistry, atomic structure, bonding, and acids and bases. (F, Sp, Su)	
CHEM 152 General Chemistry Lecture II	3
Prerequisite: Math Level 6	
Recommended: CHEM 151 and MATH 121 2.0 minimum	
The second of two semester courses designed to provide an in-depth introduction to general chemistry for students who plan careers in the health professions, sciences, or engineering. Topics include kinetics, ionic equilibria, thermodynamics, electrochemistry, descriptive chemistry, and nuclear chemistry. (F, Sp, Su)	
CHEM 161 General Chemistry Lab I	1
Prerequisite: CHEM 151 2.0 minimum or Concurrently and Reading Level 5 and Writing Level 4 and Math Level 5	
Recommended: Students with CHEM 125, consult Department	
Laboratory course designed to complement CHEM 151. Stresses basic laboratory techniques, writing lab reports, and critical thinking exercises. Topics include density determination, synthesis, empirical formulas, molecular geometry, gas laws, pH and water hardness. (F, Sp, Su)	
CHEM 162 General Chemistry Lab II	1
Prerequisite: None	
Recommended: CHEM 161 2.0 minimum and CHEM 152 Concurrently	
CHEM 162 is the second semester general chemistry laboratory course. The main focus of the course is inorganic synthesis and analysis. (F, Sp, Su)	
CHEM 182 Introductory Organic Chemistry	3
Prerequisite: Reading Level 5	
Recommended: CHEM 125 3.0 minimum or CHEM 151 2.0 minimum	
A survey of the principles of organic chemistry. Introduces the student to structure, nomenclature, chemical and physical properties, selected characteristics, preparations and reactions of the most common classes of organic compounds. Other topics include polymers, optical isomerism, and selected reaction mechanisms. (Sp)	

CHEM 192 Intro Organic Chemistry Lab	1	CHSE 123 Medical Insurance Billing I	3
Prerequisite: None Recommended: CHEM 182 2.0 minimum or Concurrently Designed for students in majors such as chemical processing, packaging, agriculture, and forestry who require only one credit of organic lab. It gives students an introduction to common techniques, equipment, and chemicals found in an organic laboratory. Particular attention is given to compounds studied in CHEM 182. (Sp)		Prerequisite: CHSE 121 2.5 minimum or OADM 197 2.5 minimum This course is a two-semester sequence which introduces the student to insurance billing, diagnostic and procedure coding for physician billing, and an introduction to billing directions for BCBS of Michigan, Medicare, Medicaid, commercial insurances and workers compensation. The student must have a grade of 2.5 or better, to continue with Medical Insurance Billing II. (F)	
CHEM 211 Chemical Process Technology I	4	CHSE 124 Medical Insurance Billing II	3
Prerequisite: (CHEM 125 2.0 minimum or CHEM 151 2.0 minimum) and Reading Level 5 and Math Level 6 This course provides an overview of Chemical Process Technology. Topics include the roles and responsibilities of Chemical Process Technicians, the equipment and systems that they operate, and relevant safety and environmental issues. The student will apply previously learned scientific principles to the field of Chemical Process Technology. (Sp)		Prerequisite: CHSE 123 2.5 minimum This course is the second course in a two-semester sequence. It includes comprehensive billing directions for BCBS of Michigan, Medicare, Medicaid, and commercial insurances, including HMOs and managed care and worker's compensation. A certificate of completion is awarded for Medical Insurance Billing if a grade point of 2.5 or better is earned in CHSE 123 and CHSE 124. (Sp)	
CHEM 251 Organic Chemistry Lecture I	4	CHSE 125 Computers in Medical Office	1
Prerequisite: None Recommended: CHEM 152 2.0 minimum The first lecture course of a two-semester sequence in organic chemistry for chemical engineering, chemical technology, chemistry, or preprofessional majors. Topics include structure and bonding, hybridization, nomenclature, stereochemistry, thermodynamics and kinetics of organic reactions, functional groups including reactions and mechanisms, and applications of mass spectrometry. (F, Sp)		Prerequisite: (CHSE 123 2.5 minimum or CHSE 124 2.5 minimum) or Concurrently Recommended: Keyboard Experience Course covers one or more current computer software programs. Students learn to record charges/payments/information, schedule appointments, ICD-9 and CPT coding, produce claim forms and patient statements, submit claims electronically, and build office databases. A certificate of completion is awarded for Medical Insurance Billing if a grade point of 2.5 or better is earned in CHSE 123, 124, and 125. (F, Sp)	
CHEM 252 Organic Chemistry Lecture II	4	CHSE 132 Health Unit Coordinator	7
Prerequisite: None Recommended: CHEM 251 2.0 minimum Continuation of CHEM 251. Topics include aromatic compounds, spectroscopy, organometallic compounds, aldehydes and ketones, carboxylic acids and their derivatives, amines, enolates, phenols, carbohydrates, polymers, and proteins. (Sp, Su)		Prerequisite: CHSE 121 2.5 minimum Course is designed to introduce the student to basic health care unit coordinator skills. Subject matter will include communication skills, computers, assertiveness, chart forms, admissions, transfers, discharges, death and dying, pharmacology, laboratory tests, transcribing physician orders, and job application skills. Clinical component is included. (F, Sp)	
CHEM 262 Quantitative Analysis	2	CHSE 143 Phlebotomy Technician	2
Prerequisite: CHEM 152 2.0 minimum and CHEM 162 2.0 minimum Theory and procedures of classical analytical techniques, including gravimetric analysis and titrimetric methods. Use of instruments such as spectrophotometers, pH meters, and others is also included. (F)		Prerequisite: None This course is designed to prepare a person to function as a phlebotomy technician. It will provide the knowledge and skill necessary to safely and skillfully obtain a blood specimen from a patient. The course includes lecture, campus, and clinical laboratory. (F, Sp)	
CHEM 272 Organic Chemistry Laboratory	2	CHSE 145 Central Service Technician	4
Prerequisite: CHEM 251 2.0 minimum Designed for students (in majors such as chemistry, pre-med, and pre-pharmacy) who require more than one credit of organic lab. It gives students experience with the chemicals, techniques, and equipment commonly employed in organic laboratories. Particular attention is given to compounds studied in CHEM 251 and 252. (F, Sp)		Prerequisite: None Prepares individuals to function competently in the central service department of a health care facility. Duties include (but are not limited to) processing of patient care equipment, supplies, and instruments for use in all departments. Includes principles and practices of decontamination, cleaning, disinfection, sterilization, and distribution of medical/surgical supplies. (F)	
CHSE - Community Health Services			
CHSE 101 Acute Care Nurse Assis/Orderly	6	CHSE 201 Dietary Manager I	5
Prerequisite: Reading Level 3 This course will prepare an individual for employment as a nursing assistant/orderly in a hospital, or other acute care delivery setting. The course will provide the knowledge and skills needed in order to provide safe basic patient care. (F, Sp, Su)		Prerequisite: Department Approval The first course in a three-semester sequence which will prepare students for a career as a dietary manager. The course will include both classroom and field experience. Topics such as the role of the supervisor, quality assurance, and nutritional principles will be included. (F)	
CHSE 108 Long-term Care Nurse Aide	4	CHSE 202 Dietary Manager II	5
Prerequisite: None This course will prepare an individual to be a nurse aide in a long-term care facility or home health care agency. This state-approved course will provide specific knowledge and skills required for a nurse aide to safely function in a long-term care setting. Upon completion of this course, the student is qualified to take the State Competency Evaluation Nurse Aide Examination. (F, Sp, Su)		Prerequisite: CHSE 201 2.5 minimum The second course in a three-semester sequence which will prepare students for a career as a dietary manager. This course will include both classroom and field experience. Content includes the purchasing process, sanitation principles, governmental laws as they apply to food service, and other required content to become a dietary manager. (Sp)	
CHSE 121 Medical Term Allied Health I	2.5	CHSE 205 Advanced Dietary Therapy	2
Prerequisite: Reading Level 5 and Writing Level 4 Medical Terminology I will provide a basic knowledge of word building, use, pronunciation, and spelling of medical terms. The use of medical terms in periodicals, textbooks, and medical care areas will be stressed. It provides a sound basis for those students interested in health careers. (F, Sp, Su)		Prerequisite: CHSE 202 2.5 minimum The third course in a three-semester sequence which is designed to provide advanced knowledge of diet therapy and nutritional care for dietary managers. The course will include knowledge of disease states, as well as laboratory data and nutritional assessment techniques as they relate to providing adequate nutritional care to patients. (Su)	
CHSE 122 Medical Term Allied Health II	2.5		

CHSE 235 Pharmacy Technician	4	CISB 133 Operating Systems	3
Prerequisite: MATH 050 2.0 minimum or Math Level 4 Recommended: AHCC 110 2.5 minimum This course is designed to introduce students to the skills necessary for a pharmacy technician position in a hospital or retail pharmacy. Students will be prepared to function with knowledge and accuracy in dispensing and control of drugs in either setting. (F)		Prerequisite: None Recommended: CISB 100 and (CISB 114 or CISB 119 or CISB 120) The course covers what operating systems are, why they exist, what they do, and how they interface with the operators and programmers. Main memory management and processor scheduling are studied along with device and file management. Case studies of current operating systems are studied. (F, Sp)	
CISB - Computer Information Systems for Business			
CISB 100 Intro Computer Info Systems	3	CISB 136 SQL: Structured Query Language	2
Prerequisite: None This course provides an introduction to computers, their role in managing business information systems, their influence on society, and their use in personal productivity. It includes a hands-on introduction to three major microcomputer tools: word processors, spreadsheets, and database management systems. (F, Sp, Su)		Prerequisite: None Recommended: Windows Familiarity This course covers the relational database language SQL. Topics include table definition, queries, special operators, the join operation, views, security, administration, and reports. A commercial SQL product is used to provide students with hands-on experience. (F, Sp, Su)	
CISB 102 Internet Literacy	3	CISB 141 Powerbuilder	3
Prerequisite: None Recommended: Windows Familiarity Designed to explore the potential uses of the Internet for business, students will develop hands-on assignments. This includes the use of e-mail, search engines, and others including the Internet applications and development of a web page. The course also discusses the rapidly changing world of the Internet including current software, trends and societal issues. (F, Sp, Su)		Prerequisite: None Recommended: CISB 119 and CISB 136 This course teaches the student how to program with PowerBuilder. Upon completion of this course, the student should be able to create a client-server application using PowerBuilder. Topics will include accessing a database, modifying and inserting data, and constructing an attractive graphical user interface including windows, menus, command buttons, etc. (Sp)	
CISB 104 Introduction to DOS	1	CISB 143 ORACLE Database for Business	2
Prerequisite: None Students in this course develop skill in applying the most common commands of the disk operating system (DOS) used by IBM-type microcomputers. Students also learn how to organize disk directories and how to create and work with files. File attributes, pipes, filters, and redirection are also discussed. (F, Sp, Su)		Prerequisite: None Recommended: Windows Familiarity and CISB 136 or CABS 136 or Equivalent This course introduces the student to the features and utilities of the Oracle relational database system as used in business. Among the topics included are datatypes, tables, indexes, views, snapshots, cursors, data integrity, triggers, stored procedures, and database security. Tuning Oracle applications are also covered. (F, Sp, Su)	
CISB 107 DOS Management	1	CISB 170 COBOL I	4
Prerequisite: None Recommended: CISB 104 Students in this course learn advanced concepts in managing a DOS based operating system. Techniques are introduced for batch files, replaceable parameters, batch programming, memory and configuration files, viruses, and the Windows Registry. (F, Sp, Su)		Prerequisite: None Recommended: CISB 100 and (CISB 114 or CISB 120) This is an introductory course in COBOL programming emphasizing syntax, structured program design, and business application processing concepts. Coding standards and program documentation are introduced. Topics include control breaks, table processing, data validation, sort report processing, and sequential file maintenance. (F, Sp, Su)	
CISB 114 Programming Logic	3	CISB 180 Intro to C/C++ Program for Bus	3
Prerequisite: None An introduction to programming logic which includes an introduction to structured design, programming control structures, arrays, file update, and control break processing. Flowcharts and the Warnier-Orr diagram are used for logic design. Coding examples and problems are covered using QBASIC and Visual BASIC. (F, Sp, Su)		Prerequisite: None Recommended: CISB 100 and (CISB 114 or CISB 120) Students will use professional development tools to become familiar with the C programming language by designing, implementing, and testing programming projects. Topics include pointers, linked lists, data structures, and dynamic memory allocation. (F, Sp)	
CISB 119 Intro Window Prog Visual BASIC	4	CISB 200 Info Sys Tech/Problem Solving	3
Prerequisite: None Recommended: MATH 050 or Equivalent An introduction to concepts of Windows programming using Visual Basic. Students learn to develop business applications by designing and creating a user interfaces and writing the necessary procedures. Students also learn to use logic development tools and object-oriented programming techniques. Topics include user interface design, beginning programming concepts, file and database programming. (F, Sp, Su)		Prerequisite: Reading Level 5 Fundamental changes have occurred in organizations with the application of computer technology. This course chronicles the source of that technology in science, explores the limitations of computer technology, examines the impact of the technology in business organizations and society, and develops problem-solving techniques for use in conjunction with computers. Students will work in teams, make group presentations and apply continuous improvement methods. (F, Sp, Su)	
CISB 122 Adv Windows Prog Visual BASIC	3	CISB 203 Developing Pages for the Web	3
Prerequisite: None Recommended: CISB 119 A second course in the Visual Basic programming sequence. This course presents programming in the Windows environment and leads to the creation of functional Windows application programs. Topics include advanced form design, random access files, development of error handlers, development of keyboard handlers creating class modules, database access and programming, developing help systems, and making Windows API calls. (F, Sp)		Prerequisite: CISB 102 2.0 minimum This course explores techniques of web page construction including HTML and the appropriate use of multimedia elements. Students will develop individual websites that progress to include elements such as graphics, sound, video and forms. Students will also demonstrate, as in a team, their understanding and application of the concepts introduced during the semester. (F, Sp, Su)	
CISB 130 Data Communications	3	CISB 204 Commercial Internet Site Mgmt	3
Prerequisite: None Recommended: CISB 100 and (CISB 114 or CISB 119 or CISB 120) The course provides a comprehensive introduction to data communications systems: the major components, how they are integrated, and the differences between the various networks and network carriers. Students learn the terminology and major protocols to a level adequate to design application programs and discuss data communication topics with other professionals. (F, Sp, Su)		Prerequisite: CISB 102 2.0 minimum and CISB 203 2.0 minimum (previously CISB 258) This course introduces concepts of website management. Students will explore website planning, promotion, security, and access control, as well as the legal issues with website management. Students will gain familiarity with various operating platforms and service software. (F, Sp)	

CISB 227 Adv Concepts Computer Info Sys	.25-4	CISB 251 Database Design	4
Prerequisite: Department Approval With this course, students will learn advanced computer information systems topics as part of a class, an independent study, or a project. Grading criteria and course objectives are determined at the first meeting. (F, Sp, Su)		Prerequisite: (CISB 136 2.0 minimum and CISB 143 2.0 minimum and CISB 250 2.0 minimum) or (CABS 232 2.0 minimum and CABS 234 2.0 minimum and CISB 250 2.0 minimum) This course provides training in the design of databases, emphasizing the relational database model. Students will build on the database design skills that they learned in other courses. They will learn more complex normalization and how to use E-R diagrams to help design and document the database. Students will participate in project teams for the course project. (F, Sp)	
CISB 230 Intro to Local Area Networks	3	CISB 253 WWW Interactive Programming	4
Prerequisite: CISB 130 2.0 minimum and CISB 133 2.0 minimum The student in this course learns how to install and maintain a Local Area Network (LAN). Topics start with basic network concepts and terms, then advance students to a point where they can install and maintain a particular network system such as Novell NetWare 5.0. (F, Sp)		Prerequisite: (CISB 119 2.0 minimum or CISB 122 2.0 minimum) and CISB 203 2.0 minimum (previously CISB 258) This course provides instruction in programming the World Wide Web (WWW) to make it interactive. The fundamentals and techniques of Common Gateway Interface programming are presented as step-by-step instructions. Students progress to more advanced topics to design interactive Web pages. Complete instructions are given on implementing JavaScript, VBScript, C, and Perl. (F, Sp)	
CISB 231 Advanced Local Area Networks	3	CISB 260 Systems Analysis and Design	4
Prerequisite: CISB 230 2.0 minimum The student in this course learns advanced administration techniques for a typical Local Area Network such as Novell NetWare. Topics start with an in-depth review of networking technology, then advance students to a point where they can tune a network to achieve maximum performance. (F, Sp)		Prerequisite: CISB 100 2.0 minimum and (CISB 114 2.0 minimum or CISB 119 2.0 minimum or CISB 120 2.0 minimum) This course presents concepts and techniques used in development of computer business application systems. The traditional approach for systems development is presented and compared to the approach used in a 4th Generation Environment. Structured techniques are utilized in the development approach as well as Computer-Assisted Software Engineering (CASE) tools. (F, Sp)	
CISB 233 Microsoft Windows NT Server	3	CISB 261 COBOL II	3
Prerequisite: CISB 130 2.0 minimum and CISB 133 2.0 minimum The main goal of this course is to provide students with a comprehensive understanding of Microsoft Windows NT Server and to prepare students to tackle server administration. The course focuses on selecting server and client hardware, installing and configuring a server, setting up and managing network printing services, establishing remote access services, interoperability with Novell NetWare, setting up for the Internet, monitoring and tuning a server, and troubleshooting problems. (F, Sp)		Prerequisite: CISB 260 2.0 minimum This course applies the concepts and techniques of systems analysis and design developed in CISB 260 into working systems. Project management concepts will be presented as well new concepts in systems analysis and design, such as Computer-Assisted Software Engineering (CASE) tools, Object-Oriented Analysis (OOA), etc. Students will be formed into project teams for a course project. (Sp)	
CISB 234 Linux/UNIX Operating System	3	CISB 270 COBOL II	3
Prerequisite: CISB 130 2.0 minimum and CISB 133 2.0 minimum This course provides hands-on training in the Linux/UNIX operating system. Students will learn to install, use, and administer a Linux/UNIX operating system including shell programming and user account management. Application software for Linux/UNIX operating systems will also be discussed. (F, Sp)		Prerequisite: CISB 170 2.0 minimum An advanced COBOL course covering indexed file creation and updating, sub-program concepts, and writing interactive programs. Copy libraries are used, and a system of related programs is completed as a class project. (Sp)	
CISB 235 Microcomputer Hardware Support	3	CISB 280 Adv C/C++ Program with OOP	4
Prerequisite: None Recommended: CISB 100 and CISB 130 and CISB 133 This course provides the student with practical, hands-on experience in installing, maintaining, and trouble-shooting microcomputer hardware and software. Topics include CPU, storage devices, add-on boards, video displays, printers, communication devices, software installation, and configuration. (F, Sp)		Prerequisite: CISB 180 2.0 minimum Students will build on their knowledge of C Programming to become familiar with the C++ programming language and object-oriented programming and design by designing, implementing, and testing programming projects. Encapsulation, inheritance, and polymorphism are explored. (F, Sp)	
CISB 236 Microcomputer Software Support	3	CISB 281 Visual C++ Programming	3
Prerequisite: None Recommended: CABS 195 and CISB 133 and CISB 200 This course provides students with the skills necessary to diagnose and correct problems that microcomputer users frequently encounter in using software. The course covers installing operating systems, installing and upgrading applications, memory optimization, printer fonts, printer emulation, remote site support, telephone support, and software training. (F, Sp)		Prerequisite: CISB 122 2.0 minimum An introduction to the fundamentals of the modern usage of C++ as a control/linking program in the Windows environment. Emphasis will be placed on using existing classes and visual tools to rapidly create applications and linkages between applications. Students will learn to use object oriented techniques with a wide collection of existing C++ tools. (F, Sp)	
CISB 245 Programming Internship	3	CISB 283 Intro to JAVA Programming	3
Prerequisite: Department Approval This internship provides the student with on-the-job experience as a computer programmer. Two hundred hours of experience at a local computer information systems site is required. The student is expected to write or maintain programs, create documentation, learn job control commands, and work on interactive systems. (F, Sp, Su)		Prerequisite: CISB 102 2.0 minimum and (CISB 114 2.0 minimum or CISB 119 2.0 minimum or CISB 122 2.0 minimum) This course introduces students to the essential elements of the Java Programming language. This course introduces students to object-oriented programming methodology and the features provided by the Java language. Students will create and modify simple Java applications and applets. (F, Sp, Su)	
CISB 247 Microcomputer Project	2		
Prerequisite: Department Approval With this course, students apply what they have learned about programming and systems development computer support as a part of an internship, an independent study, or a project. Grading criteria and course objectives are determined at the first meeting. The course requires a minimum of 150 internship hours or 96 independent study hours. (F, Sp, Su)			
CISB 250 Database Concepts	3		
Prerequisite: CISB 100 2.0 minimum and (CISB 114 2.0 minimum or CISB 119 2.0 minimum or CISB 120 2.0 minimum) Students learn the functions of a database management system. The relational model and SQL are used. Normalization and database design are covered. The CODASYL model is discussed and emerging trends are studied. (F, Sp)			

CIVL - Civil Technology

CIVL 101 Civil Drafting	4
Prerequisite: CADD 100 2.5 minimum (previously DTDS 100) or Drafting Placement Test 70% This course emphasizes plotting land surveying descriptions, traverses, contours, profiles, cross-sections, templates, and the three views required in highway work. Students will learn how to read basic highway plans and make sketches from field notes. (Sp)	

CIVL 115 Survey Fieldwork	2
Prerequisite: None	
This course consists of fieldwork using surveying equipment and techniques related to construction projects such as cloth tape, drag chain, chaining pins, levels, level rods, transits, and total stations. (F, Su)	
CIVL 120 Surveying	4
Prerequisite: MATH 114 3.0 minimum or Math Level 4	
Introduces students to surveying technology and the use of the latest equipment. Emphasis is placed on developing skills in operation and the proper handling of high-tech equipment used in the surveying business. Good field work habits and office engineering are covered. (F, Sp)	
CIVL 124 Route Survey	4
Prerequisite: CIVL 120 2.5 minimum	
This course includes surveying computations in such areas as horizontal curves, vertical curves, spirals and data needed for highway construction layout. Also includes work with surveying computation software and fieldwork with total stations. (F, Sp)	
CIVL 131 Traffic Technology	3
Prerequisite: None	
This course introduces basic principles of traffic engineering design, signing and pavement marking, traffic signalization and how these elements are used to improve motorists' safety. Emphasis is placed on the use of these devices in and around construction zones. Basic concepts on traffic flow and capacity analysis will be presented. (Sp)	
CIVL 132 Construction Materials	5
Prerequisite: MATH 114 3.0 minimum or Math Level 4	
Students will study techniques and equipment used in constructing bridges, buildings, highways and pipelines. Deals with determination of properties of aggregates, concrete and other bituminous materials. Teaches methods of designing concrete mixes for different uses and methods of sampling and testing. (Sp)	
CIVL 135 Soils Technology	3
Prerequisite: MATH 114 3.0 minimum or Math Level 4	
Exploring, sampling, testing and evaluating subsurface materials and their effect on construction are covered in this course. Includes an introduction to methods of subsurface drainage, soil classifications and physical properties of soils; and discussion, demonstration and performance with equipment used in density testing. (Sp)	
CIVL 136 Hydrology and Highway Tech	5
Prerequisite: CIVL 131 3.0 minimum and (MATH 114 3.0 minimum or Math Level 4)	
This course is an introduction to highway inventory, planning, organization, rudiments of finance, geometric design, earthwork, and drainage structures. Emphasis is placed on these elements as components of final highway plans. Analysis of precipitation and the attendant runoff and recharge will be introduced. (Sp)	
CIVL 200 Civil Mathematics	5
Prerequisite: MATH 114 3.0 minimum or Math Level 4	
This course applies differential calculus and integral calculus to practical technical problems. Topics include related rates, maximum and minimum problems and areas under curves. (Sp)	
CIVL 225 Independent Study/Civil	1-4
Prerequisite: None	
Restriction: Civil Technology Majors	
Students are allowed to undertake special research projects to apply to their professional experience and academic major. A minimum of 48 hours of work per credit is required and the completion of a written project report. This course cannot be audited. (Sp)	
CIVL 241 Statics/Strength of Materials	5
Prerequisite: CIVL 200 2.5 minimum	
Structural terminology and concepts are introduced. General behavior of structural members in compression, stress, strain, creep, fatigue, yield, tension, shear, bending and torsion due to different loading conditions are studied. Loads and forces, conditions of stability and equilibrium in structural frames and free body analysis for reactions and member forces are considered. (Sp)	

CJUS - Criminal Justice

CJUS 101 Intro to Criminal Justice	3
Prerequisite: Reading Level 5 and Writing Level 4	
A survey course designed to provide students with a current, coordinated, and comprehensive overview of criminal justice as an institution and as a system. Emphasizes historical, philosophical, constitutional, and organizational perspectives. (F, Sp, Su)	
CJUS 102 Crime Causes and Conditions	3
Prerequisite: Reading Level 5 and Writing Level 4	
Why do some individuals pursue a life of crime? This course introduces and analyzes the past, present, and future of criminology. Sociological, psychological, and biological factors are examined to determine their interaction with and impact on criminal behavior. (F, Sp, Su)	
CJUS 103 Criminal Law	3
Prerequisite: CJUS 101 1.0 minimum or Concurrently	
Study of substantive criminal law. Includes classification of crimes, common law concepts, elements of specific crimes, and discussion of current trends in criminal law nationally and locally. (F, Sp, Su)	
CJUS 106 Intro to Juvenile Justice	3
Prerequisite: Reading Level 5 and Writing Level 4	
This course emphasizes the legal foundation, as defined by Michigan law, upon which the criminal justice practitioner must rely in dealing with the juvenile offender and the juvenile victim. In addition, this course will introduce the student to the juvenile offender. (F, Sp, Su)	
CJUS 126 Juvenile Offenders/Their Fam	3
Prerequisite: None	
The course takes an in-depth look at the diverse nature of juvenile offenders and their family backgrounds. Issues impacting juvenile behavior such as gender, gangs, drugs, and disabilities will be discussed. (F, Sp, Su)	
CJUS 130 Local Detention	3
Prerequisite: Reading Level 5 and Writing Level 4	
The course explains operations of local detention facilities and their unique role in the criminal justice system. Emphasis is placed on Michigan jail and lockup operations, as well as the organization, management, policy environment, and emerging issues confronting American jails. Differences in jail and prisons regarding operations and differing clientele are also covered. (F, Sp)	
CJUS 131 Introduction to Corrections	3
Prerequisite: Reading Level 5 and Writing Level 4	
Recommended: Math Level 3	
Introduction to agencies and processes within the correctional system. An examination of correctional officer behavior, corrections legislation, the courts, correctional institutions and their operation, and administration. Includes overview of history sentencing, probation, parole, and community corrections. This course is required for the corrections officer vocational certificate. (F, Sp)	
CJUS 133 Juvenile Residential Services	3
Prerequisite: None	
Recommended: CJUS 106 1.0 minimum or Concurrently	
All aspects of court-placement of juveniles in residential facilities will be examined. Staffing and operations of both public and private agencies will be discussed, focusing both on treatment and detention issues. (F, Sp, Su)	
CJUS 134 Probation and Parole	3
Prerequisite: (CJUS 101 1.0 minimum or CJUS 131 1.0 minimum) or Concurrently	
An introductory level course in probation and parole with strong emphasis on counseling, interviewing skills, and supervision techniques. Students will also learn the mechanics of writing violation, progress, and pre-sentence reports. (F, Sp, Su)	
CJUS 135 Legal Issues in Corrections	3
Prerequisite: (CJUS 130 1.0 minimum or CJUS 131 1.0 minimum) or Concurrently	
Study of current constitutional, federal and state law as it pertains to penal institutions, inmates, and correctional employees. The course will provide students with insight into policy considerations behind state and federal law, legal process, court decisions, and inmate rights. This course is required for the correctional officer vocational certificate. (F, Sp, Su)	

CJUS 201 Criminal Justice Org/Admin	3	CJUS 256 Interpersonal Comm in Jails	1
Prerequisite: CJUS 101 1.0 minimum or Concurrently		Prerequisite: CJUS 130 1.0 minimum and CJUS 255 1.0 minimum and Department Approval	
Examines the primary concepts of criminal justice organization and administration emphasizing processes and theories, communications, leadership, personnel, budgeting, planning, information management, and community relations. (F, Sp, Su)		This course introduces students to the IPC model developed specifically to work with prisoners. Three basic components of the model will be taught, including the primary components of sizing up a situation, observing an encounter, and using application skills to control behavior of prisoners. (F, Sp)	
CJUS 203 Criminal Procedure	3	CJUS 260 Criminal Invest & Procedures	3
Prerequisite: CJUS 103 1.0 minimum or Concurrently		Prerequisite: None	
Study of criminal procedural law. Includes laws of arrest, search and seizure, and admissions and confessions; suspect identification; and rules of evidence. (F, Sp)		Co-requisite Courses: CJUS 261 and CJUS 262 and CJUS 263 and CJUS 264 and CJUS 265 and CJUS 266 and CJUS 267 and CJUS 268 and PFFT 114	
CJUS 204 Criminal Investigation	4	Designed for hands-on, practical instruction in the following areas: crime scene processing, on-scene preliminary investigation, witness interviewing, suspect identification, latent prints, photography, child abuse, sexual assault, narcotics, and preparation for court. (F, Sp, Su)	
Prerequisite: Reading Level 5 and Writing Level 4		CJUS 261 Michigan Crim Law & Procedure	3
Recommended: CJUS 103 1.0 minimum		Prerequisite: None	
Examines the fundamentals of criminal investigation such as crime scene procedures, collection and preservation of physical evidence, interviewing, interrogation, and latent investigation. (F, Sp)		Co-requisite Courses: CJUS 260 and CJUS 262 and CJUS 263 and CJUS 264 and CJUS 265 and CJUS 266 and CJUS 267 and CJUS 268 and PFFT 114	
CJUS 205 Policing into the 21st Century	3	Designed for hands-on, practical instruction in criminal law and procedure as it pertains to law enforcement in the state of Michigan. Topics include crimes against persons and property, regulatory crimes, public order crimes, juvenile law, admissions/confessions, laws of arrest, search and seizure, and suspect identification. (Sp, Su)	
Prerequisite: CJUS 101 1.0 minimum		CJUS 262 Patrol Procedures and Tactics	3
This course is designed to provide the student with an understanding of the philosophy of community policing. As such, the components and processes involved in the implementation of non-traditional policing methods, as well as the development of a partnership between the community and the police, will be examined. (F, Sp)		Prerequisite: None	
CJUS 206 Interview and Interrogation	2	Co-requisite Courses: CJUS 260 and CJUS 261 and CJUS 263 and CJUS 264 and CJUS 265 and CJUS 266 and CJUS 267 and CJUS 268 and PFFT 114	
Prerequisite: Reading Level 5 and Writing Level 4		The course is designed to identify and utilize proper patrol techniques and procedures necessary for a police officer to function safely and effectively. Topics include preparation for patrol, types of patrol, responding to crimes in progress, roadblocks, civil process, handling abnormal persons, and officer survival. (Sp, Su)	
Provides students with the techniques and procedures utilized in conducting lawful, admissible, and successful investigative interviews and interrogations. (F, Sp, Su)		CJUS 263 Standard First Aid	2
CJUS 242 Unarmed Defense	3	Prerequisite: None	
Prerequisite: None		Co-requisite Courses: CJUS 260 and CJUS 261 and CJUS 262 and CJUS 264 and CJUS 265 and CJUS 266 and CJUS 267 and CJUS 268 and PFFT 114	
Hands-on techniques to prepare students to properly and effectively handle law enforcement related physical confrontations. Includes use of force decision-making skills, pressure points, control holds, and handcuffing. (F, Sp, Su)		Designed to identify the roles and responsibility of a law enforcement officer at the scene of a medical emergency based upon American Red Cross standard first aid and CPR training. (Sp, Su)	
CJUS 245 Report Writing in CJ	2	CJUS 264 Rprt Writing in Law Enforce	1
Prerequisite: CJUS 101 1.0 minimum or CJUS 130 1.0 minimum or CJUS 131 1.0 minimum		Prerequisite: None	
Designed to meet the needs of criminal justice writing. Components include grammar, punctuation, sentences, paragraphs, styles of writing, and proper documentation of work effort. Frequent writing practice. (F, Sp, Su)		Co-requisite Courses: CJUS 260 and CJUS 261 and CJUS 262 and CJUS 263 and CJUS 265 and CJUS 266 and CJUS 267 and CJUS 268 and PFFT 114	
CJUS 246 Jail Safety and I.D. Issues	4	Designed to prepare the student to effectively and efficiently write a proper police report that will serve as a basis for the issuance of a warrant and court prosecution. Topics include obtaining information, basic English skills, criminal justice terminology, and proper formatting. (Sp, Su)	
Prerequisite: (CJUS 130 1.0 minimum and CJUS 242 1.0 minimum) or Concurrently and Department Approval		CJUS 265 Highway Traffic Operations	3
This course introduces students to safety and identification issues in a jail setting. The course includes hands-on training in fire safety, fingerprinting, first aid and CPR, and legal defense techniques against spontaneous knife attacks. (F, Sp)		Prerequisite: None	
CJUS 250 Correctional Institutions	3	Co-requisite Courses: CJUS 260 and CJUS 261 and CJUS 262 and CJUS 263 and CJUS 264 and CJUS 266 and CJUS 267 and CJUS 268 and PFFT 114	
Prerequisite: CJUS 131 1.0 minimum or Concurrently		This course is designed to familiarize the student with the proper procedures for traffic control and enforcement. Emphasizes state motor vehicle laws and procedures, arrests and citations, O.U.I.L., and accident investigation. (Sp, Su)	
Examines the historical development of corrections institutions in the United States. The organizational structure, purpose, programs, security aspects, and prisoner due-process rights, as well as the future of institutions, will be examined. This course is required for the correctional officer vocational certificate. (F, Sp, Su)		CJUS 266 Basic Police Science	3
CJUS 251 Correctional Clients	3	Prerequisite: None	
Prerequisite: (CJUS 130 1.0 minimum or CJUS 131 1.0 minimum) or Concurrently		Co-requisite Courses: CJUS 260 and CJUS 261 and CJUS 262 and CJUS 263 and CJUS 264 and CJUS 265 and CJUS 267 and CJUS 268 and PFFT 114	
Emphasis is placed on the needs, identities and development of the recipient of correctional services. Students will gain insight into the behavior and motivations of the corrections client and learn intervention strategies. This course is required for the correctional officer vocational certificate. (F, Sp, Su)		This course is concerned with technical and physical techniques employed in the investigation of crime. The course involves traditional classroom as well as field experiences. (Sp, Su)	
CJUS 255 Human Relations/Criminal Just	3		
Prerequisite: (CJUS 101 1.0 minimum or CJUS 130 1.0 minimum or CJUS 131 1.0 minimum) or Concurrently and Reading Level 5			
This course focuses on understanding those aspects of interpersonal relations most directly linked to attainment of organizational and individual goals in work settings. This course is required for the correctional officer vocational certificate. (F, Sp, Su)			

CJUS 267 Law Enforcement Phys Traing 2
Prerequisite: None
Co-requisite Courses: CJUS 260 and CJUS 261 and CJUS 262 and CJUS 263 and CJUS 264 and CJUS 265 and CJUS 266 and CJUS 268 and PFFT 114
 Designed to assist law enforcement students in developing and improving their physical fitness. The course includes running, aerobics, calisthenics, and stretching. (Sp, Su)

CJUS 268 Precision Driving 3
Prerequisite: None
Co-requisite Courses: CJUS 260 and CJUS 261 and CJUS 262 and CJUS 263 and CJUS 264 and CJUS 265 and CJUS 266 and CJUS 267 and PFFT 114
 The course is designed to identify and utilize proper driving techniques and procedures using the principles of precision driving. Course involves both classroom and hands-on driving. (Sp, Su)

CJUS 281 Directed Independent Study 1-3
Prerequisite: Department Approval
 Sixteen hours of study and research are assigned per credit. Students are given criminal justice related research assignments which will introduce them to research procedures and resources. (F, Sp, Su)

CJUS 285 Law Enforcement Internship 2
Prerequisite: Department Approval
 Sixteen eight-hour shifts are scheduled with an approved police department. Written reports are required. (F, Sp, Su)

CJUS 286 Juvenile Internship I 3
Prerequisite: CJUS 106 1.0 minimum or Concurrently and Department Approval
 The student will be placed in a local program dealing with young people from at risk populations. A classroom component includes preparation for job interviews and other skill-building exercises for working in the juvenile justice field. Written reports are required. (F, Su)

CJUS 287 Juvenile Internship II 3
Prerequisite: (CJUS 133 1.0 minimum or Concurrently) and CJUS 286 1.0 minimum and Department Approval
Recommended: For Juvenile Care Worker Students
 The student will be placed in a residential facility with juveniles who have been adjudicated by the court to be detained in a secure environment for treatment and rehabilitation purposes. (F, Sp, Su)

CJUS 288 Corrections Internship 3
Prerequisite: Department Approval
 The student will be placed in a local or state corrections facility that will allow him or her to experience many facets of correction operations. Weekly written reports are required and periodic meetings are mandatory. A minimum of 160 hours is required. (F, Sp, Su)

CNCP - Computer Numerical Control

CNCP 101 PC Applications for Technology 3
Prerequisite: None
 An introduction to PCs as used in a technical-industrial setting: Students will learn how computer hardware is set up, Windows-NT along with word processing, spreadsheet, computer graphic and presentation software will be covered. Students will extensively use the Internet to obtain assignments, turn in homework and research projects. (F, Sp, Su)

CNCP 105 Basic Machining Processes 3
Prerequisite: (MATH 114 2.0 minimum or Math Level 4) and Reading Level 5 and Writing Level 4
Recommended: Computer Experience
 This course is designed for non-machinist/Computerized Numerical Control (CNC) programming majors who need an introduction to machining processes and systems. Topics covered will include conventional machining processes, basic CNC programming and Computer-Aided Manufacturing (CAM) operations. (F, Sp, Su)

CNCP 110 Foundations of CNC Programming 4
Prerequisite: MACH 105 3.0 minimum and (MATH 114 2.0 minimum or Math Level 4) and Reading Level 5 and Writing Level 4
Recommended: Computer Experience
 This course lays the foundation for all other Computerized Numerical Control (CNC) courses. Subjects covered include Z-axis cycles, tool diameter compensation, rough and pocketing cycles, macros and sub-programs, and parametric programming with equations. Students will write programs for 3-axis and 5-axis mills and 3-axis lathes. (F, Sp)

CNCP 130 Machine Controls and Setup 4
Prerequisite: CNCP 110 2.0 minimum
 Focuses on the set up and operation of a variety of CNC machines ranging from simple 3-axis to sophisticated 5-axis conversational controls. Topics will include proper machine start-up and shut-down, tool data management, fixture alignment and program loading and editing. (F, Sp)

CNCP 194 CNC Project Lab 1-4
Prerequisite: CNCP 130 2.0 minimum
 Further skills are pursued involving modern concepts of numerical control of machine tools, including the interrelationship of these new manufacturing methods in the various departments of a company. (F, Sp, Su)

CNCP 200 Unigraphics NC 4
Prerequisite: CNCP 110 2.0 minimum and CADD 242 2.0 minimum (previously DTDS 180)
 Unigraphics NC (Numerical Control) is a leader in parametric Computer Aided Manufacturing software used to graphically program CNC machine tools. Course topics will cover preparation of drawings for programming, basic APT programming, Multi-axis programming and Overlay features. Selected programs will be run on CNC machines. (Sp)

CNCP 210 Mastercam 4
Prerequisite: CNCP 110 2.0 minimum
 Mastercam is a powerful graphics based programming software for CNC machine tools. Mastercam software is designed to generate CNC programs from mechanical CAD drawings. Students will use Mastercam to solve CNC programming problems in both 2-D and 3-D environments and run selected programs on CNC equipment. (F, Sp)

CNCP 215 Generative Machining 4
Prerequisite: CNCP 110 2.0 minimum
 Generative Machining (Gen-Mach) is an advanced CNC programming module that is part of the IDEAS engineering design software. Gen-Mach uses IDEAS CAD drawings to graphically create CNC cutter path programs that are parametrically linked to the CAD model. Students will learn a variety of profile contouring and complex surface machining methods for CNC lathes and mills. (F, Sp)

CNCP 220 Gibbs Cam 4
Prerequisite: CNCP 110 2.0 minimum
 This course teaches the student how to generate 3-D models and produce CNC codes for milling and turning applications using Gibbs Cam software. (F, Sp)

COOP - Cooperative Education

COOP 210 Cooperative Education (Tech) 3
Prerequisite: Department Approval
Recommended: 2.5 GPA or Greater
 Provides technical students with professional and practical work experience in their career field. The student works for a co-op employer as a paid, temporary, part-time employee trainee in a planned, structured and supervised work experience. Students apply knowledge and skills learned in academic courses to real-world situations. (F, Sp, Su)

COOP 271 Cooperative Education MDOT I 3
Prerequisite: Department Approval
Restriction: Civil Technology Majors
 Provides first-year civil technology students with practical work experience in their career field. The student works for the Michigan Department of Transportation (MDOT) in jobs related to highway and bridge construction as well as attending in-class instruction. Enrollment is restricted to MDOT Civil Technology cooperative education students. (Su)

COOP 272 Cooperative Education MDOT II 3**Prerequisite:** Department Approval**Restriction:** Civil Technology Majors

Provides second-year civil technology students with practical work experience in their career field. The student works for the Michigan Department of Transportation (MDOT) in jobs related to highway and bridge construction, as well as attending in-class instruction. Enrollment is restricted to MDOT Civil Technology cooperative education students. (F, Su)

CPSC - Computer Science**CPSC 120 Introduction to Computers** 3**Prerequisite:** Reading Level 3 and Writing Level 4 and Math Level 4

In this survey course, the student learns of the application of computers in society, considers their social and economic implications, examines questions of privacy and security, and considers recent advances in computer technology. In addition, the student is exposed to beginning instruction and practice in word processing, spreadsheet and database applications, programming, and user networks. (F, Sp, Su)

CPSC 150 Fortran 3**Prerequisite:** Reading Level 5 and Writing Level 4 and (Math Level 9 or MATH 122 2.0 minimum or MATH 126 2.0 minimum)

Structured programming techniques are applied in the design of algorithms and their implementation in FORTRAN 77. Topics included are stepwise refinement outlines, control structures, functions and subroutines, input and output procedures with text files, data types, arrays, and string processing. (F, Sp, Su)

CPSC 230 Algorithms and Computing W/C++ 4**Prerequisite:** Reading Level 5 and Writing Level 4 and (MATH 151 2.0 minimum or Concurrently)

This course establishes fundamental computational techniques required for continuing study in computer science. Students design, implement and test C++ programs to solve a wide range of problems. Topics include program development, functions, control structures, text file operations, data types/classes, recursion, STL string/vector<T> classes, arrays, pointer variables, and elementary linked lists. (F, Sp, Su)

CPSC 231 Computing and Data Structures 4**Prerequisite:** CPSC 230 2.0 minimum and Reading Level 5 and Writing Level 4

Data abstraction and related theory for representation and access of information using C++. Algorithms and abstract data structures such as the stack, queue, binary search tree, heap and priority queue are studied. (F, Sp)

CPSC 260 Computer Science Structures 4**Prerequisite:** Reading Level 5 and Writing Level 4 and MATH 151 2.0 minimum and (CPSC 150 2.0 minimum or CPSC 230 2.0 minimum or Department Approval)

Introduction to logical and algebraic structures and techniques required for further study in computer science. Topics include statement logic and proof techniques, relations, functions, directed and undirected graphs and their matrix representations, Boolean algebras and logic networks, regular expressions, finite-state machines, and Turing machines. (Sp)

CPSC 295 Ind. Study in Computer Science 1-4**Prerequisite:** Department Approval

An opportunity for self-directed learners to explore topics related to, but not taught in the curriculum. Students spend at least two hours per week for each credit. A detailed proposal must be submitted by the student for approval by the Department and supervising instructor prior to registration. (F, Sp, Su)

CUAI - Credit Union Accounting and Insurance**CUAI 102 Credit Union Accounting** 3**Prerequisite:** None

This course emphasizes those areas of financial accounting relevant to external reporting by credit unions. (Sp)

CUMA - Credit Union Management**CUMA 100 Intro Credit Union Operations** 3**Prerequisite:** None

This course provides students with an overview of the credit union movement, its position in the financial services industry, and basic credit union operating procedures. Directed toward staff, management, and elected officials of credit unions who wish to increase their knowledge of both the credit union movement and operations. (F, Sp)

CUMA 200 Credit and Collections 3**Prerequisite:** None

This course covers the basic fundamentals of the credit/collection industry. Emphasis on learning the basics of the credit decision and the collection of past due loans. The course is designed for credit union personnel who want to better understand the relevant laws and regulations of credit union credit and collections. (F, Sp)

CUMA 215 Business Law for Credit Unions 3**Prerequisite:** None

Covers fundamental principles of law applicable to credit union personnel. This course will prepare students to perform the legal responsibilities of their jobs more knowledgeably. Course content includes study of contracts, personal and real property, torts, crimes, and the nature and sources of law as related to credit union operations. (F, Sp)

DANC - Dance**DANC 101 Ballet I** 2**Prerequisite:** None

This course is designed for the student with no dance experience. Included are basic alignment principles, ballet vocabulary and steps, and elementary combinations of ballet technique for the beginning dance student. Basic barre and center floor combinations will be included. (F, Sp, Su)

DANC 102 Modern Dance I 2**Prerequisite:** None

This course is designed for the students with no dance experience. Included are basic alignment training techniques, spatial relationships, and elementary combinations. Some improvisation will be used throughout the course to assist in developing kinesthetic, spatial, cognitive, and physical awareness. (F, Sp, Su)

DANC 103 Jazz I 2**Prerequisite:** None

This course is designed for the student with no dance experience. Included are basic alignment, warm-up, and isolations in jazz dance technique for beginning dance students. Spatial relationships and rhythm are emphasized. (F, Sp)

DANC 104 Tap I 2**Prerequisite:** None

This course is designed for the student with no dance experience. Included are basic tap origins, vocabulary, steps, combinations, and rhythms. Basic alignment training techniques, spatial relationships, and elementary combinations are explored. (F, Sp)

DANC 105 Jazz I - Summer 1**Prerequisite:** None

This course includes basic alignment, warm-up, and isolation in jazz dance technique for beginning dance students. Spatial relationships and rhythm are emphasized. (Su)

DANC 106 Tap I - Summer 1**Prerequisite:** None

This course includes basic tap origins, vocabulary, steps, combinations, and rhythms for the beginning dance students. Basic alignment training techniques, spatial relationship, and elementary combinations are explored. (Su)

DANC 107 Ballet I - Summer 1**Prerequisite:** None

This course is designed for the student with no dance experience. Included are: basic alignment principles, ballet vocabulary and steps, and elementary combinations of ballet technique for the beginning dance student. Basic barre and center floor combinations will be included. (Su)

DANC 108 Modern Dance I - Summer	1	DANC 205 Jazz III - Summer	1.5
Prerequisite: None This course is designed for the student with no dance experience. Included are: basic alignment training techniques, spatial relationships, and elementary combinations. Some improvisation will be used throughout the course to assist in developing kinesthetic, spatial, cognitive, and physical awareness. (Su)		Prerequisite: Dance Audition for Jazz III Emphasis is placed on developing a personal style of movement. Course includes a continuation of alignments, warm-up, and isolations in addition to more complex rhythms and combinations. (Su)	
DANC 112 Modern Dance II	2	DANC 208 Modern Dance III - Summer	1.5
Prerequisite: None Recommended: DANC 102 or Previous Modern Experience This course includes a continuation of movement theory, alignment, increased training practices, spatial relationships, vocabulary, and longer combinations. Improvisation will be used to develop kinesthetic, spatial, cognitive, and physical awareness. The student will begin to explore the aspects of building a personal movement style. (F, Sp, Su)		Prerequisite: Dance Audition for Modern Dance III This course includes a continuation of alignment training, spatial relationships, improvisation techniques, movement theory, increased training practices, movement symbols, vocabulary, and longer combinations. Emphasis is placed on center floor transitional techniques, dance dynamics, examination and practice of movement qualities and development of a personal movement style in preparation for performance. (Su)	
DANC 114 Tap II	2	DANC 217 Ballet IV - Summer	1.5
Prerequisite: None Recommended: DANC 104 or Previous Tap Experience Designed for the student who has successfully completed Beginning Tap I, this course includes a continuation of tap vocabulary, steps, combinations, and rhythms. Emphasis is placed on increased complexity in rhythms and combinations. The students will begin to explore the aspects of building a personal movement style. (F, Sp)		Prerequisite: Department Approval This course includes a continuation of movement theory, alignment, increased training practices, vocabulary, and longer combinations. Emphasis is placed on dance dynamics and continued development of a personal movement style. Performance skills are sharpened and include: projection, musicality, flow, articulation, clarity of intent, motivation, phrasing, and gesture. (Su)	
DANC 115 Jazz II - Summer	1	DANC 250 Dance Improvisation	2
Prerequisite: None Recommended: DANC 103 or Previous Jazz Experience Emphasis is placed on beginning to develop a personal style of movement in preparation for performance. Course includes a continuation of alignment, warm-up, and isolations in addition to various rhythms and combinations. (Su)		Prerequisite: DANC 101 2.0 minimum or DANC 102 2.0 minimum or DANC 103 2.0 minimum This course is designed for the major and nonmajor. It provides students with opportunities to discover the skills of critical and creative thinking, as well as convergent and divergent thinking through problem-solving exercises. Spatial, kinesthetic, and emotional awareness are uncovered, as well as the discovery of movement qualities. (F)	
DANC 161 Concert Dance Repertory	1	DANC 255 Choreography	3
Prerequisite: Dance Audition for Concert Repertory This course is designed for the student who has reached a level of dance technique that will adequately support his/her participation in the concert process. This process includes auditions, rehearsals, and public performances in the ballet genre and concentrates on memorization, projection, and musicality. (Sp)		Prerequisite: DANC 250 2.0 minimum (previously DANC 125) This course is designed to acquaint the student with basic choreographic techniques. Improvisation is utilized to explore ideas. Dance elements of time, space, and energy will be explored in addition to the mechanical and gestural aspects of movement. The concept of language and symbol system is studied. (Sp)	
DANC 165 Video Dance Repertory	.5	DANC 260 Dance History	3
Prerequisite: Department Approval This course is designed for the student who has reached the intermediate level or above. Students learn choreography, staging and performance, specifically designed for video production. A short-term rehearsal process culminates in a finished video performance. A maximum of one credit in video dance can be used for degree requirements. (F, Sp, Su)		Prerequisite: None This course is a dance history overview commencing with the origins of ballet to the present. Important developments and contributors in the field of American dance education will be interwoven with the important developments and contributors of Western dance forms. (F)	
DANC 201 Ballet III	3	DANC 265 Dance Anatomy	3
Prerequisite: Dance Audition for Ballet III This course includes a continuation of movement theory, alignment, increased training practices, vocabulary, and longer combinations. Emphasis is placed on center floor transitional techniques, dance dynamics, and development of a personal movement style in preparation for performance. Pointe shoes are optional. (F, Sp, Su)		Prerequisite: DANC 101 2.0 minimum or DANC 102 2.0 minimum or DANC 103 2.0 minimum This course is an introduction to basic anatomy as it applies to dance. Terminology, practical application, theory of movement, nutrition, and injury prevention and care will be incorporated. Emphasis will be placed on major muscles, muscle groups, and skeletal structure. (Sp)	
DANC 202 Modern Dance III	3	DANC 295 Independent Study in Dance	1-3
Prerequisite: Dance Audition for Modern Dance III This course includes a continuation of alignment training, spatial relationships, improvisation techniques, movement theory, increased training practices, movement symbols, vocabulary, and longer combinations. Emphasis is placed on center floor transitional techniques, dance dynamics, examination and practice of movement qualities, and development of a personal movement style in preparation for performance. (F, Sp, Su)		Prerequisite: Department Approval An opportunity for self-directed learners to explore topics related to, but not taught in the curriculum. Students spend at least two hours per week for each credit. A detailed proposal must be submitted by the student for approval by the Department and supervising instructor prior to registration. (F, Su)	
DANC 203 Jazz III	3		
Prerequisite: Dance Audition for Jazz III This course includes a continuation of alignment training, movement theory, increased training practices, isolations, and longer combinations. Emphasis is placed on jazz dance dynamics, center floor transitional techniques, and development of a personal movement style in preparation for performance. (F, Sp)			
DANC 204 Tap III	3		
Prerequisite: Dance Audition for Tap III This course includes a continuation of tap vocabulary, steps, combinations, and rhythms. Emphasis is placed on increased complexity in rhythms and combinations, and development of a personal movement style in preparation for performance. (F, Sp)			

DHYN and DADH - Dental Hygiene

DADH 128 Dental Radiography	4
Prerequisite: DHYN 110 3.0 minimum and DHYN 112 2.0 minimum and DHYN 114 2.0 minimum Co-requisite Course: Second Semester Dental Hygiene Lectures discuss production and emission of dental X-radiation, indications for exposure, technics of exposure, processing, evaluation, and interpretation of dental radiographs. Individualized laboratory sessions provide students practice in exposing, processing, mounting, and evaluating radiographs. (Sp)	

DHYN 110 Preclinical Dental Hygiene	6	DHYN 210 Clinical Dental Hygiene II	6
Prerequisite: Admission to Dental Hygienist Program		Prerequisite: DADH 128 2.0 minimum and DHYN 120 2.0 minimum and DHYN 122 2.0 minimum and DHYN 124 2.0 minimum and DHYN 126 2.0 minimum	
Co-requisite Courses: DHYN 112 and DHYN 114 and DHYN 116		Co-requisite Courses: DHYN 212 and DHYN 214 and DHYN 216	
Through lecture and simulated clinical experience the student is introduced to the clinical practice of dental hygiene: operator preparation, oral examinations and assessment, oral prophylaxis procedures, oral health practices and patient education, and an orientation to the profession. Students will also learn success maintenance of their own oral health. (F)		A continuation of clinic, perfecting comprehensive treatment planning and advanced prophylaxis techniques: deep scaling, root planing, nutritional counseling, ultrasonic scaling, and the use of chemotherapeutic agents. This course coordinates the periodontal case study, advanced patient care and management, and a review of ethical case studies. (F)	
DHYN 112 Oral Anatomy	4	DHYN 212 Advanced Dental Hygiene Proced	4
Prerequisite: Admission to Dental Hygienist Program		Prerequisite: DADH 128 2.0 minimum and DHYN 120 2.0 minimum and DHYN 122 2.0 minimum and DHYN 124 2.0 minimum and DHYN 126 2.0 minimum	
Co-requisite Courses: DHYN 110 and DHYN 114 and DHYN 116		Co-requisite Courses: DHYN 210 and DHYN 214 and DHYN 216	
Study of nomenclature, morphologic characteristics, and physiologic relationships of human primary and permanent teeth. Head and neck anatomy and the histologic and embryologic development is also studied and related to the clinical practice of dental hygiene. Laboratory activities develop observation and dexterity skills while studying this information. (F)		The study of advanced clinical dental hygiene procedures with emphasis on the hygienist's role as co-therapist in performing root planing, ultrasonic instrumentation, and applying chemotherapeutic agents. Students complete a periodontal case study to demonstrate appropriate implementation of their periodontal knowledge and therapy skills. (F)	
DHYN 114 Oral Pathology	2	DHYN 214 Clinical Oral Pathology	1
Prerequisite: Admission to Dental Hygienist Program		Prerequisite: DADH 128 2.0 minimum and DHYN 120 2.0 minimum and DHYN 122 2.0 minimum	
Co-requisite Courses: DHYN 110 and DHYN 112 and DHYN 116		Co-requisite Courses: DHYN 210 and DHYN 212 and DHYN 216	
Study of the diseases effecting oral tissues, including the principles of inflammation and repair, developmental disturbances, stains and accretions, diseases of the teeth and supporting structures, oral infection, injuries and neoplasms. (F)		Case histories are presented in which the student's objective is to formulate a differential diagnosis of an unknown oral lesion and propose a rational approach for evaluation and treatment of the patient. (F)	
DHYN 116 Dental Pharmacology	2	DHYN 216 Dental Public Health & Educ	2
Prerequisite: Admission to Dental Hygienist Program		Prerequisite: DADH 128 2.0 minimum and DHYN 120 2.0 minimum and DHYN 122 2.0 minimum and DHYN 124 2.0 minimum and DHYN 126 2.0 minimum	
Co-requisite Courses: DHYN 110 and DHYN 112 and DHYN 114		Co-requisite Courses: DHYN 210 and DHYN 212 and DHYN 214	
A study of the administration, use, action, and effects of drugs most commonly used by patients and their relationship to dental treatment and dental hygiene procedures. (F)		Students review scientific literature, dental epidemiology, principles of public health, and health care delivery systems. Further study includes human behavior, growth and development, attitudes, learning skills, teaching methodologies, interpersonal relations, group dynamics, and communication skills relating to patient education, motivation, and acceptance of health care. (F)	
DHYN 120 Clinical Dental Hygiene I	6	DHYN 220 Clinical Dental Hygiene III	7
Prerequisite: DHYN 110 3.0 minimum and DHYN 112 2.0 minimum and DHYN 114 2.0 minimum and DHYN 116 2.0 minimum and EMSB 102		Prerequisite: DHYN 210 2.0 minimum and DHYN 212 2.0 minimum and DHYN 214 2.0 minimum and DHYN 216 2.0 minimum	
Co-requisite Courses: DADH 128 and DHYN 122 and DHYN 124 and DHYN 126		Co-requisite Courses: DHYN 222	
Initial clinical practice of basic dental hygiene services: recognition and recording or oral conditions, medical history, oral health education, prophylaxis fluoride treatment, sterilization, radiography, and desk procedures. Skills are developed further in treatment planning, periodontal examination, caries detection, instrument sharpening, emergency recognition/prevention/care, and clinical photography. (Sp)		Performing comprehensive dental hygiene care in a timely manner is emphasized. The management and care of elderly patients and persons challenged with physical, mental, social/emotional, and selected medical conditions is presented and coordinated with clinical practice. Employment preparation and legal and professional ethical issues are reviewed. (Sp)	
DHYN 122 Principles of Periodontics	2	DHYN 222 Community Oral Health	4
Prerequisite: DHYN 110 3.0 minimum and DHYN 112 2.0 minimum and DHYN 114 2.0 minimum and DHYN 116 2.0 minimum		Prerequisite: DHYN 210 2.0 minimum and DHYN 212 2.0 minimum and DHYN 214 2.0 minimum and DHYN 216 2.0 minimum	
Co-requisite Courses: DADH 128 and DHYN 120 and DHYN 124 and DHYN 126		Co-requisite Course: DHYN 220	
Study of anatomy, physiology, and histology of the periodontal tissues as they relate to the identification, etiology, prevention and treatment of periodontal disease, and occlusal disorders. Evaluation of disease status, diagnosis, patient management, and disease prevention is presented relative to the hygienist's role as a co-therapist in private practice. (Sp)		Students implement a program plan for a community project utilizing assessment, planning, implementation, and evaluation processes. Dental specialties and the dental hygienist's role in recognizing specialty care needed by patients is presented. Each student participates in a variety of community health projects and observing in dental specialty practices. (Sp)	
DHYN 124 Nutrition and Oral Health	2	DHYN 224 Testing Styles and Inventory	2
Prerequisite: DHYN 110 3.0 minimum and DHYN 112 2.0 minimum and DHYN 114 2.0 minimum and DHYN 116 2.0 minimum and EMSB 102		Prerequisite: DHYN 210 2.0 minimum and DHYN 212 2.0 minimum and DHYN 214 2.0 minimum and DHYN 216 2.0 minimum	
Co-requisite Courses: DADH 128 and DHYN 120 and DHYN 122 and DHYN 126		An introduction to dental hygiene licensure exam testing techniques, test construction, and item analysis. Students inventory their current knowledge of dental hygiene and through self-evaluation and planning, establish study skills while recognizing their personal study needs for national boards and licensing exams. (Sp)	
Discussion of the identification, function, metabolism, and sources of specific nutrients required for normal growth, development, and repair of tissues. Application of principles to the individual's nutritional needs, providing nutritional counseling and diet information to special needs patients, and the relationship of nutrition to oral health are emphasized. (Sp)		DHYN 230 RDA Procedures - DH	2
DHYN 126 Dental Materials and Methods	3	Prerequisite: DADH 128 2.0 minimum and DHYN 120 2.0 minimum and DHYN 126 2.0 minimum	
Prerequisite: DHYN 110 3.0 minimum and DHYN 112 2.0 minimum and DHYN 114 2.0 minimum and DHYN 116 2.0 minimum		A specially designed course for dental hygiene students wishing to learn auxiliary dental assistant procedures and those intraoral functions delegated only to the licensed registered dental assistant in the State of Michigan. Instruction is emphasized in the laboratory setting to prepare the student for practical application of these procedures. (Sp)	
Co-requisite Courses: DADH 128 and DHYN 120 and DHYN 122 and DHYN 124			
Study of terminology, selection, manipulation, and evaluation of materials used in dentistry. Activities emphasize dental materials and procedures utilized by the dental hygienist. Students are prepared in the knowledge needed to educate patients regarding the benefit of certain restorative procedures for good oral health. (Sp)			

ECON - Economics

- ECON 120 Power, Authority and Exchange** 4
Prerequisite: Reading Level 5 and Writing Level 4
 A comparative study of primitive social economies and modern political systems. An emphasis will be placed on the evolution of economic organization in human society. (F, Sp)
- ECON 140 Current Economic Issues** 3
Prerequisite: Reading Level 5 and Writing Level 4
 An introductory course focusing on economic problems and issues within the American economy. It provides an overview of economic analysis. Topic areas relate to an overall look at the economic system, government policy, prices and their application, money, income, and national income accounts of the United States. (F)
- ECON 201 Principles of Economics-Micro** 3
Prerequisite: Reading Level 5 and Writing Level 4 and Math Level 3
 This course is designed to develop objective consideration of economic issues and provides information and understanding of how resources are allocated by prices. Topics for study include price theory, consumer demand, cost and market structure, the role of government in the market, resource pricing, and international trade. (F, Sp, Su)
- ECON 202 Principles of Economics-Macro** 3
Prerequisite: ECON 201 1.0 minimum or Concurrently and Reading Level 5 and Writing Level 4 and Math Level 3
 This course addresses the theory of national income, employment and the price level, and government fiscal and monetary policies designed to influence aggregate economic activity. It also addresses exchange rates, international financial relationships, and economic growth. (F, Sp, Su)
- ECON 213 U.S. Economic/Business History** 3
Prerequisite: Reading Level 5 and Writing Level 4
 This course provides a survey of American economic and business history, change, and growth since the colonial period. Topics include an overview of business organization, the role of government and technological change, American industrial development, labor unions, and capitalization patterns. (F, Sp)

EDUC - Education

- EDUC 201 Teacher Education Practicum** 2
Prerequisite: Reading Level 5 and Writing Level 6
 Beginning practical experience and training in the field for individual students. The student is placed with an educational institution over a semester. This class allows students to work with a teacher in a classroom setting receiving hands on experience in the school and classroom environment. (F, Sp)
- EDUC 220 Introduction to Education** 3
Prerequisite: Reading Level 5 and Writing Level 6
 An overview of the foundations, philosophy, history and organization of education as a human endeavor and an introduction to education as a teaching profession. Topics include legal concerns, issues and trends in American education, school governance and school finance. (F, Sp, Su)

EFSN - English for Specific Needs

- EFSN 090 English for Specific Needs** 1.5
Prerequisite: None
 Designed to improve oral, aural, and written work-related communication. Administers an intake evaluation which determines each student's baseline English competency and concentrates on specific needs of course participants, as related to work-site tasks. Provides refugee and immigrant employees training in how to perform their jobs more effectively and efficiently. (F, Sp, Su)

ELCT - Electronics Technology

- ELCT 100 Schematic Drawing** 1
Prerequisite: None
 A nonmathematical beginning course in electronics covering electronic component recognition, reading schematics, freehand and computer drawing of schematic diagrams, and relating schematic diagrams to electronic circuits. (F, Sp, Su)

- ELCT 101 Analog Problems** 5
Prerequisite: Reading Level 5 and Writing Level 2 and Math Level 4
Recommended: High School Algebra
 Provides circuit analysis problem practice for both DC and AC circuits. Topics include the review of intermediate algebra, algebraic manipulation and solution of electronic formulas, and trigonometric solutions of AC circuits using complex numbers. A scientific calculator is required for polar/rectangular conversion and complex number operations. (F, Sp)

- ELCT 109 DC Circuits** 3
Prerequisite: ELCT 101 1.0 minimum or Concurrently
 A half-semester beginning DC circuit analysis course covering resistors, power supplies and digital multimeters. Lecture and laboratory topics include resistor color code, series, parallel, series-parallel circuits, Kirchoff network laws, superposition and Thevenin theorems. (F, Sp)

- ELCT 110 AC Circuits** 3
Prerequisite: (ELCT 101 1.0 minimum and ELCT 109 1.0 minimum) or Concurrently
Recommended: ELCT 109 be taken first half of semester
 A half-semester AC circuit analysis course covering complex numbers and trigonometry to analyze series and parallel RCL circuits. RC filter networks and series and parallel resonant circuits are also discussed. AC generators, oscilloscopes and frequency counters are used in laboratory experiments. (F, Sp)

- ELCT 112 Transistors** 6
Prerequisite: ELCT 110 1.0 minimum
 A lecture and laboratory course dealing with bipolar and field effect transistor biasing, and single and multistage amplifier circuits. Circuits are discussed from the analysis, design and troubleshooting standpoints. (F, Sp)

- ELCT 120 Programming Preparation** 2
Prerequisite: None
 The student will learn software that provides preparation for machine or high-level language programming. Software used is DOS, Windows, a text editor and a flowcharting program. Emphasis is placed on developing flowcharts for electronics related problems that can be programmed on a computer. (F, Sp, Su)

- ELCT 131 Digital Basics** 3
Prerequisite: None
 Introduces digital electronics microprocessor basics: Binary number system, basic gates, combination and sequential logic circuits, programming of a microprocessor using mnemonics and addressing modes. Laboratory work includes the analysis of digital circuits built on PC boards and the programming, debugging and interfacing of a MPU trainer to several IO devices. (F, Sp, Su)

- ELCT 151 Computer Troubleshooting** 3
Prerequisite: ELCT 171 1.0 minimum or Concurrently
 This is a troubleshooting and repair course intended for students in the computer repair certificate and computer technician associate degree programs. Course topics include basic troubleshooting techniques, unit and board swap computer troubleshooting, and computer preventive maintenance. (Sp)

- ELCT 160 Logic Problems Analysis** 3
Prerequisite: None
Recommended: High School Algebra
 A fundamental analysis course intended for students in the Computer Repair Certificate Program and the Computer Technician Associate Degree Program. Course topics include manipulation of formulas used in electronics, basic gate operation, truth tables, Boolean algebra, binary, octal and hexadecimal base number systems. (F, Su)

- ELCT 161 Soldering/Desoldering** 1
Prerequisite: None
 A basic soldering course. Topics include soldering electronic components to printed circuit boards and surface mount soldering. Desoldering components using solder wick, vacuum desoldering tools and equipment and printed circuit board repair. Students assemble a digital multimeter as a final course project. (F, Sp, Su)

- ELCT 170 Computer Repair Electronics I** 6
Prerequisite: None
Recommended: ELCT 160 or Algebra
 A basic electronics course intended for students in the computer repair certificate and associate degree programs. This course begins with basic electricity concepts and discusses basic electricity, basic electronics, electric circuits, diodes, transistors, digital devices, and digital circuits. (F)

ELCT 171 Computer Repair Electronics II	6
Prerequisite: ELCT 170 1.0 minimum	
A digital electronics and computer systems course intended for students in the computer repair certificate and associate degree programs. Course topics include electronic, magnetic and optical memory, microprocessors, I/O devices, computer system operation, and an introduction to data communications and LANs. (Sp)	
ELCT 180 Computer Test Equipment I	3
Prerequisite: None	
A basic test equipment course intended for students in the Computer Repair Certificate Program and the Computer Technician Associate Degree Program. This course introduces the student to the operation of electronics test equipment including VOM, DMM, oscilloscopes, storage oscilloscopes and basic digital test equipment. (F)	
ELCT 181 Computer Test Equipment II	2
Prerequisite: (ELCT 171 1.0 minimum or Concurrently) or (ELCT 131 1.0 minimum and ELCT 110 1.0 minimum)	
Intended for students in the computer repair certificate and the computer technician associate degree programs. Topics include the computer POST test, software diagnostic programs, hardware diagnostic cards, and other computer troubleshooting equipment. (Sp)	
ELCT 206 Project Lab	1-3
Prerequisite: ELCT 112 1.0 minimum and Department Approval	
A guided independent study of a topic of interest within the area of electronics. The student will write a research paper or construct an electronic device. Instructor approval must be obtained prior to enrolling in this course. (F, Sp, Su)	
ELCT 211 Linear Circuits I	3
Prerequisite: ELCT 112 1.0 minimum	
Solid state devices such as the JFET, MOSFET and op-amps are studied. Applications of op-amps and comparators are examined using active filters, summing and differential amplifiers, window comparators and DC motor control circuits. (F)	
ELCT 212 Linear Circuits II	3
Prerequisite: ELCT 112 1.0 minimum	
Linear devices such as PLL, VCO, waveform generators and voltage regulator circuits are studied. A unit on printed circuit board design is included. The student will design a printed circuit layout and construct a bipolar power supply. (Sp)	
ELCT 231 Advanced Digital Electronics	4
Prerequisite: ELCT 112 1.0 minimum and ELCT 131 1.0 minimum	
Deals with advanced topics in digital electronics: adders, comparators, code converters, ALUs, non-sequential and shift register counters, display systems and solid-state memories. It also covers SIPO, PISO, SIGNATURE and D/A and A/D circuits. Laboratory work includes the analysis, design, construction and troubleshooting of digital circuits using SSI, MSI and LSI lcs. (F)	
ELCT 232 Digital Comm and Networking	4
Prerequisite: ELCT 131 1.0 minimum	
Introduces serial (Asynchronous & Synchronous) and parallel data transfer standards and cabling: RS-232, RS-485, IEEE-488, SCSI, Centronics, modems, 10Base (2.5,T,F) and USB. Networking standards, protocols, medium construction and testing, monitoring and troubleshooting. Laboratory work includes constructing cables, installing, monitoring and troubleshooting a fault tolerant LAN around popular client server NOS-WNNT4.0 (Sp)	
ELCT 242 Comp Intrfcng and Peripherals	3
Prerequisite: ELCT 231 1.0 minimum	
Covers 80X86MPU pins, address decoding, interfacing of static and dynamic memories and IO adapters. Serial and parallel data transfer, interfacing of keyboard, display, floppy disk, modem, LAN network cards and motor control hardware will also be covered. Laboratory work involves construction of hardware and writing programs in Assembly and C languages. (Sp)	
ELCT 251 Electronic Troubleshooting	2
Prerequisite: (ELCT 112 1.0 minimum or Concurrently) and ELCT 131 1.0 minimum	
Introduces the principles of troubleshooting analog and digital circuits: analog circuits consisting of diodes, BJTs, FETs and digital circuits consisting of combination logic, decoders, multiplexers, counters, shift registers and display units. Laboratory work is based on computer-simulated troubleshooting exercises and troubleshooting digital circuits built on PC boards. (F)	

ELCT 261 Consumer Product Systems	3
Prerequisite: ELCT 112 1.0 minimum or Concurrently	
Common electronic consumer product operation is explained through block diagrams and schematic diagrams. Systems include AM and FM stereo radio, black-and-white and color television and videotape recorders. Lab work will involve measurements and alignments of normally operating systems. (Sp)	
ELCT 271 Communications I	4
Prerequisite: ELCT 112 1.0 minimum	
This course includes a review of resonant circuits, LC filter networks, radio frequency amplifiers, oscillators, amplitude modulation transmitting and receiving circuits and systems. (F)	
ELCT 272 Communications II	4
Prerequisite: ELCT 271 1.0 minimum	
The student will learn frequency modulation transmitting and receiving circuits and systems, digital communications, fiber optic systems, cellular radio, transmission lines, antennas and microwave devices. (Sp)	
ELCT 290 Biomedical Internship	2
Prerequisite: Department Approval	
This course will allow students to be placed in hospital bio-med repair shops and earn credit for satisfactory work performance. The students' occupational interests are considered along with their background or related courses to determine placement. (F, Sp, Su)	
ELCT 291 Communications Internship	2
Prerequisite: Department Approval	
This internship will allow the student to gain practical work experience in the communication/electronics field of study. (F, Sp, Su)	
ELCT 292 Digital Electronics Internship	2
Prerequisite: Department Approval	
This internship will allow the student to gain practical work experience in the digital electronics field of study. (F, Sp, Su)	

ELTE - Electrical Technology

ELTE 100 Electrical Safety Practices	1
Prerequisite: None	
This course covers basic electrical safety practices in the home, electrical laboratory and in construction and industry. Included are state and federal standards and practices. This course is a prerequisite for, or to be taken concurrently with, all ELTE courses that have a lab. (F, Sp, Su)	
ELTE 105 Intro Industrial Automation	4
Prerequisite: None	
This course provides a hands-on introduction to current manufacturing technology. Students will learn to use the MS/PC DOS computer including word processor, spreadsheet and operating system applications. Students will experience the use of industrial robots, programmable logic controllers, machine vision, computer-aided design, discrete electronic components and statistical process control. (F, Sp, Su)	
ELTE 110 Practical Electricity	3
Prerequisite: ELTE 100 2.0 minimum or Concurrently and Reading Level 3 and Writing Level 2 and Math Level 3	
This course introduces the student to electricity on a practical level. The student will learn to use meters to measure electrical quantities, do basic circuit calculations, install basic household electrical wiring and investigate the behavior of motors and transformers. Reviews electrical codes and standards. This course is also available in an open-entry self-paced, modularized format. (F, Sp, Su)	
ELTE 112 Basic Wiring Installation	2
Prerequisite: None	
Recommended: ELTE 110 2.0 minimum	
This course covers installation of a variety of wiring systems in wood frame and masonry construction. Students will practice installing nonmetallic sheathed cable, flexible metal conduit, electrical metallic tubing and rigid conduit. (F, Sp, Su)	

ELTE 121 Analyzing Electric Circuits 5
Prerequisite: None
Recommended: ELTE 110 2.0 minimum and (MATH 050 2.0 minimum or Math Level 4)
 This course utilizes concepts in basic algebra, vector algebra and trigonometry to solve DC and AC electric circuit problems. Topics will include units, Ohm's law, network analysis, series parallel and combination DC and AC circuits, inductance and capacitance. (F, Sp)

ELTE 122 Industrial Control Electronics 5
Prerequisite: None
Recommended: ELTE 121 2.0 minimum and (ELTE 105 2.0 minimum or INAU 100 2.0 minimum)
 This course introduces the student to solid-state circuitry used in industry. Students will study diodes, transistors, SCRs, triacs, optical isolators, transducers, power circuits, etc. Laboratory will include oscilloscope usage. The course also includes an introduction to Boolean algebra and digital circuits. (Sp)

ELTE 123 Motors and Transformers 5
Prerequisite: None
Recommended: ELTE 121 2.0 minimum
 This course begins with three-phase circuits, including three-phase power measurement. Contains practical introduction to single- and three-phase transformers, motors and alternators. Brief coverage of DC machines. (F)

ELTE 131 Intro to Machine Control 4
Prerequisite: None
Recommended: ELTE 110 2.0 minimum
 Covers relay logic and controls using industrial standards. Use of correct symbols and standard construction of wiring and ladder diagrams is emphasized. Laboratory exercises include wiring three-phase motor control circuits utilizing two- and three-wire control and machine control circuits utilizing limit and proximity switches, timers, relays, etc. (F, Sp)

ELTE 141 National Electrical Code I 4
Prerequisite: None
Recommended: ELTE 110 2.0 minimum
 An introductory course designed for individuals with little or no knowledge of the Electrical Code. Students will study the structure and scope of the National Electrical Code and learn how to locate often used code sections: Ohm's law, voltage drop, wire and conduit sizing and installation methods. (F, Sp)

ELTE 142 National Electrical Code II 4
Prerequisite: None
Recommended: ELTE 141 2.0 minimum
 This course is for individuals with field experience and basic electrical training who need a review for the State Journey Examination. Students will review the Code with focus on locating and interpreting the National Electrical Code. In addition to the NEC, State of Michigan electrical rules will be reviewed. (F, Sp)

ELTE 143 National Electrical Code III 4
Prerequisite: None
Recommended: ELTE 141 2.0 minimum or ELTE 142 2.0 minimum
 For individuals with a journeyman electrician's license who need to review for the State Master's Exam. Students will cover the Code using the index method, discuss interpretation of the Code, study State of Michigan electrical and construction code rules and discuss topics appropriate to the Electrical Contractors Exam. (F)

ELTE 145 Electrical Prints for Building 4
Prerequisite: None
Recommended: ELTE 110 2.0 minimum or ELTE 141 2.0 minimum
 Covers construction prints emphasizing standard and nonstandard symbols and interpretation of prints. Uses the National Electrical Code to calculate branch circuit, feeder, motor circuit and service sizes. Other topics include uninterruptible power supplies, signaling and safety systems. (Sp)

ELTE 150 Electric Motor Maintenance 2
Prerequisite: None
Recommended: ELTE 110 2.0 minimum
 Students learn to diagnose and test electric motors. Students will learn to identify and repair common problems in motors using meters, test equipment and appropriate tools. An introduction to rewinding and metal working procedures is also included. (F, Sp)

ELTE 232 Industrial Control Design 4
Prerequisite: None
Recommended: ELTE 131 2.0 minimum
 This course is a continuation of ELTE 131, covering more components and larger more complex machine control diagrams; including automation interlocking and automatic continuous cycling of machinery. Students will be taught to design the control circuits for more complex machines in conformance with industry standards. (Sp)

ELTE 240 Electrical Estimating 3
Prerequisite: None
Recommended: ELTE 112 2.0 minimum and (ELTE 141 2.0 minimum or ELTE 142 2.0 minimum or ELTE 143 2.0 minimum or ELTE 145 2.0 minimum)
 Basics of preparing accurate, competitive electrical estimates for the building trades. Topics include take-off procedure using electrical, mechanical and architectural prints; lighting design; labor and materials cost and evaluation techniques and specifications. Students should have wiring experience, practice in the use of NEC rules and electrical prints before enrolling. (F)

ELTE 260 Intro/Programmable Controllers 4
Prerequisite: None
Recommended: ELTE 131 2.0 minimum
 This course covers programmable logic controllers with focus on common operating principles. Topics include the capabilities, similarities and differences among controllers, programming (examine on/off, timers and counters) and connecting external devices to Allen-Bradley, Modicon and Omron. (F)

ELTE 261 Allen-Bradley PLC-5 Advanced 6
Prerequisite: None
Recommended: ELTE 260 2.0 minimum
 This course covers programming and connections for Allen-Bradley PLC-5 controllers. Focus on math, subroutine, file, block transfer, sequencers, logic and bit manipulation instructions. Students will learn logic for machine control, programming and utilizing intelligent cards, ASCII, analog input/output and system documentation. (Sp)

ELTE 291 Project Lab 1-4
Prerequisite: ELTE 110 2.0 minimum and Department Approval
 A guided study of topics of interest in electrical technology. The student will prepare a summary report of activities and demonstrate results of laboratory experiences. (F, Sp, Su)

EMSA - Emergency Medical Services

EMSA 100 First Aid and CPR 2
Prerequisite: None
 Designed to provide the knowledge and skills necessary to respond to and treat emergency situations until professional medical help is obtained. First aid and CPR certificates issued upon successful completion. (F, Sp, Su)

EMSB - Emergency Medical Services Seminars

EMSB 102 CPR for Health Care Prof .5
Prerequisite: None
 This seminar is designed for CPR instruction of health care providers and adheres to American Heart Association guidelines. Content includes one- and two-rescuer CPR, child and pediatric CPR, adult, child, pediatric foreign body airway obstruction, information about heart disease, risk factors, and physiology of the heart and lungs. (F, Sp, Su)

EMSB 103 CPR Recertification .25
Prerequisite: None
 This seminar is designed for CPR instruction for individuals who have previously obtained instruction in the basics of cardiopulmonary resuscitation and foreign body airway obstruction. The participants must have a current provider card for CPR. The curriculum and testing consists of recertification techniques for CPR. (F, Sp, Su)

EMSB 104 CPR Instructor .75
Prerequisite: None
 The CPR Instructor's seminar is to provide the opportunity and forum to acquire knowledge and skills to accurately instruct and test the Basic Life Support Provider's courses according to American Heart Association guidelines. (F, Sp, Su)

EMSB 106 Infant/Child CPR .25**Prerequisite:** None

This seminar provides instruction of CPR for special situations or groups. Infant and child CPR and foreign body airway obstruction for babysitters and parents would fall under this curriculum. (F, Sp, Su)

EMSB 107 First Aid/CPR Sem/ Daycare Prov .5**Prerequisite:** None

This seminar is intended for daycare providers to meet the requirements of the Department of Social Services to maintain Daycare Licensure. It will provide eight hours of instruction in basic first aid and infant/child CPR with foreign body airway obstruction. (Su)

EMSB 110 First Aid and CPR Seminar .5**Prerequisite:** None

This seminar offers adult CPR including airway obstruction and four hours of basic first aid. Red Cross certification is given to those successfully completing both components. (F, Sp, Su)

EMTA - Emergency Medical Technology**EMTA 100 Medical First Responder 4****Prerequisite:** None

This course will provide the student with the knowledge and skills necessary to manage ill or injured victims at the scene of an emergency until the arrival of ambulance personnel. Successful completion enables the student to apply for state licensure as a medical first responder. (F, Sp, Su)

EMTA 101 Basic EMT I 4**Prerequisite:** Reading Level 5 and Writing Level 6**Co-requisite Course:** EMTA 102

First in a sequence of five courses to prepare the student as a basic EMT. Emphasis is placed on didactic material including airway management, patient assessment, CPR soft tissue injuries, head, chest, and abdominal injuries, and proper use of equipment in the delivery of basic emergency care. (F, Sp, Su)

EMTA 102 Basic EMT II 2**Prerequisite:** None**Co-requisite Course:** EMTA 101

Second in a sequence of five courses to prepare the student as a Basic EMT. Emphasis is placed on practical skills including patient assessment, bandaging, splinting, backboarding, oxygen delivery equipment, CPR, and airway management in the delivery of basic emergency care. (F, Sp, Su)

EMTA 103 Basic EMT III 4**Prerequisite:** EMTA 101 3.0 minimum and EMTA 102 3.0 minimum**Co-requisite Courses:** EMTA 104 and EMTA 112

The third in a sequence of five courses to prepare the student as a Basic EMT. Emphasis is placed on didactic material including the recognition and management of environmental and medical emergencies; verbal, written and radio communications; triage, emergency childbirth; and pediatric emergencies. (Sp, Su)

EMTA 104 Basic EMT IV 2**Prerequisite:** EMTA 101 3.0 minimum and EMTA 102 3.0 minimum**Co-requisite Courses:** EMTA 103 and EMTA 112

The fourth course in a sequence of five to prepare the student as a Basic EMT. Emphasis is placed on the overall delivery of basic emergency care through simulated emergencies. Successful completion of the course, EMTA 101, EMTA 102, EMTA 103, & EMTA 112 enables the student to apply for licensing as a Basic EMT. (Sp, Su)

EMTA 105 Ambulance Driving 1**Prerequisite:** None

A course to provide the EMT with the knowledge and practical experience in the operation of an ambulance. The course will focus on safety, defensive driving techniques, and specialized driving maneuvers. (F, Sp)

EMTA 108 Legal Issues in EMS 2**Prerequisite:** None

A course to assist the EMT in understanding the legal system and legal principles as they apply to emergency pre-hospital care. Emphasis is placed on the evaluation of legally sound report writing skills, deposition delivery, and legal testimony. (Sp)

EMTA 112 Basic EMT Clinical 2**Prerequisite:** EMTA 101 3.0 minimum and EMTA 102 3.0 minimum**Co-requisite Courses:** EMTA 103 and EMTA 104

The fifth course in a sequence of five to prepare the student as a basic EMT. Includes required OSHA standards, hospital clinicals, ambulance clinicals, and a community service component. Classroom time enhances assessment, history taking skills, and report writing. (F, Sp, Su)

EMTA 114 Rescue/Extrication/Danger Situ 3**Prerequisite:** None

A course to provide EMS or rescue personnel with skills in light and heavy vehicle extrication, industrial rescue techniques, extrication from farm machinery, and other specialized rescue techniques. Emphasis is placed on patient and rescuer safety. (F, Sp)

EMTA 222 EMS Instructor Coordinator 6**Prerequisite:** Department Approval

A Michigan Department of Consumer & Industry Services approved course for EMS personnel interested in becoming an instructor coordinator. Includes teaching and testing methods, lesson plan development, writing performance objectives, course administration, MDCIS application for course approval, and meeting state requirements. Student teaching required. (Su)

ENGL - English**ENGL 122 Writing: Literature and Ideas 4****Prerequisite:** WRIT 121 2.0 minimum or WRIT 131 2.0 minimum or (Reading Level 5 and Writing Level 8)

An alternative to WRIT 122, ENGL 122 introduces the students to various literary forms and develops analytical skills in reading, writing, and research techniques. Writing assignments begin with short essays and conclude with an extensive literary research paper. (F, Sp, Su)

ENGL 132 Honors Writing: Lit and Ideas 4**Prerequisite:** WRIT 121 3.5 minimum or WRIT 131 3.5 minimum

An alternative to WRIT 122, ENGL 132 is an introduction to various literary forms, in addition to the development of analytical reading and writing skills and research techniques leading to a literary research paper. (Same as ENGL 122 but taught on an advanced level.) (Sp)

ENGL 201 Introduction to Poetry 4**Prerequisite:** WRIT 121 2.0 minimum or WRIT 131 2.0 minimum or (Reading Level 5 and Writing Level 6)**Recommended:** ENGL 122

An introduction to the content, form, style, and technique of poetry; its structural types: metrical, blank, and free verse; its thematic types: lyric, narrative, and dramatic; and its effects or purposes. The course emphasizes poetry written in English but includes English translations of representative poetry from other languages and cultures. (F, Su)

ENGL 202 Introduction to Drama 4**Prerequisite:** WRIT 121 2.0 minimum or WRIT 131 2.0 minimum or (Reading Level 5 and Writing Level 6)**Recommended:** ENGL 122

Introduces drama and its literary techniques and conventions. Attention is given to principles and theory, but understanding of the plays is emphasized. Representative plays from Greek, European, English, and American dramatists. (Sp)

ENGL 203 Introduction to Prose 4**Prerequisite:** WRIT 121 2.0 minimum or WRIT 131 2.0 minimum or (Reading Level 5 and Writing Level 6)**Recommended:** ENGL 122

This course introduces students to selected prose genres that have evolved in cultural history. Students consider how different forms reflect the diverse functions of language in developing human societies. In addition to essays, novels, and short stories, works studied may include folk tales, epistles, prose poems, (auto)biographies, satires, or documentaries. (F)

ENGL 205 The Power of Autobiography 3**Prerequisite:** WRIT 121 2.0 minimum or WRIT 131 2.0 minimum or (Reading Level 5 and Writing Level 6)

Autobiographical writing, which includes letters, journals, and diaries, is the focus of this special seminar on prose literature. Works to be read chronicle the literary, artistic, historical, social, and political life transformations experienced by notable twentieth century figures. Course emphasis is on the power of the personal narrative as literature. (F)

- ENGL 208 Children's Literature** 4
Prerequisite: WRIT 121 2.0 minimum or WRIT 131 2.0 minimum or (Reading Level 5 and Writing Level 6)
Recommended: ENGL 122
 This course offers a survey of children's literature, from fairy tales to young adult novels. Students will be introduced to a variety of literary genres in classic and contemporary works. Students will experience the literature through writing, discussion, oral or dramatic presentations, and other means suitable to classroom practice. (Sp)
- ENGL 211 World Literature I** 4
Prerequisite: WRIT 121 2.0 minimum or WRIT 131 2.0 minimum or (Reading Level 5 and Writing Level 6)
 A selective survey of the literatures of major world cultures reflecting the diversity of the continents of Africa, the Americas, Asia, and Europe to approximately the 17th century. Explores the historical, ethnic, aesthetic, political, economic, and thematic elements of their respective cultures through narrative prose fiction, poetry, and drama. (F)
- ENGL 212 World Literature II** 4
Prerequisite: WRIT 121 2.0 minimum or WRIT 131 2.0 minimum or (Reading Level 5 and Writing Level 6)
 A survey of the literatures of major world cultures reflecting the diversity of the continents of Africa, the Americas, Asia, and Europe from approximately the 17th century through the present. Explores the historical, ethnic, aesthetic, political, economic, and thematic elements of their cultures through narrative prose fiction, poetry, and drama. (Sp)
- ENGL 220 Science Fiction** 4
Prerequisite: WRIT 121 2.0 minimum or WRIT 131 2.0 minimum or (Reading Level 5 and Writing Level 6)
Recommended: ENGL 122
 ENGL 220 is an introductory course which explores significant issues in science fiction. Novels and/or stories will be the main focus, although works from other media also may be studied. The course's emphasis transcends entertainment to include understanding, interpretation, and analysis as well. (F)
- ENGL 240 The Film as Art** 4
Prerequisite: WRIT 121 2.0 minimum or WRIT 131 2.0 minimum or (Reading Level 5 and Writing Level 6)
Recommended: ENGL 122
 This course will introduce film as an art form capable of making perceptive comments on our civilization. Thematic analysis of 12 to 15 motion pictures of recognized merit will emphasize the film maker's visual and aural techniques as well as conventions more commonly associated with literature. (Sp, Su)
- ENGL 245 Popular Culture and Mass Media** 4
Prerequisite: WRIT 121 2.0 minimum or WRIT 131 2.0 minimum or (Reading Level 5 and Writing Level 6)
Recommended: ENGL 122
 A study of the popular culture distributed by mass media (newspapers, radio, film, television, magazines, and music videos) and how the media and popular culture reflect and shape our cultural beliefs. Extensive use of multimedia. (F)
- ENGL 255 American Literature I** 4
Prerequisite: WRIT 121 2.0 minimum or WRIT 131 2.0 minimum or (Reading Level 5 and Writing Level 6)
Recommended: ENGL 122
 Provides a perspective on the evolution of traditional American literature beginning with the writings of the first European explorers and Native American oral tradition. Features selected essays, autobiographical writings, poems, fiction, and drama from the mid-15th century to 1865, including the work of women and ethnic minorities, which have contributed to American thought. (F)
- ENGL 256 American Literature II** 4
Prerequisite: WRIT 121 2.0 minimum or WRIT 131 2.0 minimum or (Reading Level 5 and Writing Level 6)
Recommended: ENGL 122
 Provides a perspective on the further development of traditional American literature from 1865 (the Realism period) to contemporary literature. Features selected essays, autobiographical writings, poems, fiction, and drama from the end of the Civil War to the literature of the late 12th century, including the work of women and ethnic minorities, which have profoundly shaped American literature. (Sp)

- ENGL 260 African-American Literature** 4
Prerequisite: WRIT 121 2.0 minimum or WRIT 131 2.0 minimum or (Reading Level 5 and Writing Level 6)
Recommended: ENGL 122
 This course introduces the African-American literary tradition as seen in the literature of the Americas, including the Caribbean. Selections explore the black experience in autobiography, essay, fiction, poetry, and drama. Themes of slavery, colonialism, and the Black Diaspora are discussed. Reading selections include the Harlem Renaissance and contemporary texts. (Sp)
- ENGL 265 Japanese Literature** 4
Prerequisite: WRIT 121 2.0 minimum or WRIT 131 2.0 minimum or (Reading Level 5 and Writing Level 6)
Recommended: ENGL 122
 Arranged chronologically, this course draws heavily on many different genres of Japanese literature. The basis for selection of works to be read rests on the insight that each work gives to the Japanese society which produced it, and upon its universal characteristics. (Sp)
- ENGL 266 British Literature I** 4
Prerequisite: WRIT 121 2.0 minimum or WRIT 131 2.0 minimum or (Reading Level 5 and Writing Level 6)
Recommended: ENGL 122
 British Literature I surveys the poetry, prose, and drama of the major British writers from Chaucer (14th Century) to the Satirists (18th Century). The works are selected to reflect the attitudes and values of British culture and the perception of the world from a British point of view. (F)
- ENGL 267 British Literature II** 4
Prerequisite: WRIT 121 2.0 minimum or WRIT 131 2.0 minimum or (Reading Level 5 and Writing Level 6)
Recommended: ENGL 122
 British Literature II surveys the poetry, prose, and drama of the major British writers from the Romantics (19th Century) to late 20th Century. The works are selected to reflect the attitudes and values of British culture and the perception of the world from a British point of view. (Sp)
- ENGL 270 Literature by Women** 4
Prerequisite: WRIT 121 2.0 minimum or WRIT 131 2.0 minimum or (Reading Level 5 and Writing Level 6)
Recommended: ENGL 122
 A study of selected works by English and North American women writers. Designed to increase understanding of the themes, images, issues, and modes of expression of women writers. (Sp)
- ENGL 290 Shakespeare** 4
Prerequisite: WRIT 121 2.0 minimum or WRIT 131 2.0 minimum or (Reading Level 5 and Writing Level 6)
Recommended: ENGL 122
 Introductory course in the dramatic works of William Shakespeare. Students will read 9 to 12 plays representative of the author's comedies, histories, and tragedies. (Sp)
- ENGL 295 Independent Study in English** 1–4
Prerequisite: Department Approval
 An opportunity for self-directed learners to explore topics related to, but not taught in the curriculum. Students spend at least two hours per week for each credit. A detailed proposal must be submitted by the student for approval by the Department and supervising instructor prior to registration. (F, Sp, Su)

ENRI—Enrichment

- ENRI 105 Life Learning Portfolio** 1
Prerequisite: Reading Level 5 and Writing Level 6 and Department Approval
 This course provides the opportunity for students to create a portfolio to document learning acquired through work, volunteer, and/or life employment experience. The finished portfolio can then be submitted to the LCC Registrar's Office to request college credit for knowledge and skill—learning outcomes—that correspond to LCC courses. (Sp)

ENVR - Environmental Science**ENVR 121 Environmental Rules and Regs** 3**Prerequisite:** Reading Level 5 and Writing Level 4

Overview of federal and state environmental regulations and agency rules that regulate discharges to air, water, and land. Course focuses on the environmental media affected and attempts to regulate environmental protection in society. Laws are examined by why regulation is needed, what the law does, and how it does it. (Sp)

ENVR 122 Enviro Sampl & Instrumentation 4**Prerequisite:** Reading Level 5 and Writing Level 4 and Math Level 5

An introduction to a variety of sampling and monitoring procedures and the instrumentation to accomplish the task. Students will learn how to take samples of ground water, surface water, air, soil, drums, and tanks. Appropriate sampling protocol, records, quality assurance, safety, and decontamination are stressed. (F)

ENVR 131 Industrial Process Safety 3**Prerequisite:** Reading Level 5 and Writing Level 4

Introduction to general manufacturing processes with emphasis on waste reduction and pollution prevention strategies. Case studies of basic processes, materials flow, worker health and safety, waste reduction, and pollution prevention will be examined. Fundamentals of toxicology, epidemiology, and environmental health will be used in understanding workplace safety and health issues. (Sp)

ESLP - English as a Second Language**ESLP 014 Integrated Skills I** 6**Prerequisite:** Placement Test

Designed for high beginning level non-native speakers of English who have basic literacy skills. Emphasis on reading and vocabulary skill-building activities designed to prepare students for future academic success. Integrated skills format allows reading, grammar, speaking/listening, and writing activities to be combined using themes. (F, Sp)

ESLP 015 ESL Writing Skills I 4**Prerequisite:** Placement Test

Designed for high beginning level non-native speakers of English who want to improve their ability to write paragraphs. Students learn simple and progressive verb forms in the present, past and future tenses. A process approach to writing is used and students are introduced to basic word processing skills. (F, Sp)

ESLP 016 Communication Skills I 4**Prerequisite:** Placement Test

Designed for high beginning level non-native speakers of English. Students build awareness of American English pronunciation and focus on troublesome pronunciation features; students practice speaking English and improve basic listening comprehension in a variety of context, including academic, social, and professional settings. (F, Sp)

ESLP 024 Integrated Skills II 6**Prerequisite:** ESLP 011 2.0 minimum or ESLP 014 2.0 minimum or Placement Test

Low intermediate level integrated skills course for non-native speakers of English. Emphasis is on reading and vocabulary skill-building activities designed to prepare students for future academic success. An integrated skills format allows reading, grammar, speaking/listening, and writing activities to be combined using themes. (F, Sp)

ESLP 025 ESL Writing Skills II 4**Prerequisite:** ESLP 012 2.0 minimum or ESLP 015 2.0 minimum or Placement Test

Designed for low intermediate level non-native speakers of English. Students progress from writing paragraphs to writing academic style essays and use basic word processing skills. Grammatical structures worked on include the simple and perfect verb tenses, sentence combining, and recognizing sentence fragments. A process approach to writing is used. (F, Sp)

ESLP 026 Communication Skills II 4**Prerequisite:** ESLP 013 2.0 minimum or ESLP 016 2.0 minimum or Placement Test

Designed for low intermediate level non-native speakers of English. Instruction focuses on the features of American English pronunciation, as well as improving listening comprehension and oral communication through functional situations, such as role plays, discussions, and informal reports. (F, Sp)

ESLP 034 Integrated Skills III 6**Prerequisite:** ESLP 021 2.0 minimum or ESLP 024 2.0 minimum or Placement Test

Designed for high intermediate level non-native speakers of English. Emphasis is on reading and vocabulary skill-building activities designed to prepare students for future academic success. An integrated skills format allows reading, grammar, speaking/listening, and writing activities to be combined using themes. (F, Sp)

ESLP 035 ESL Writing Skills III 4**Prerequisite:** ESLP 022 2.0 minimum or ESLP 025 2.0 minimum or Placement Test

This course is designed for high intermediate level non-native speakers of English. Students write essays using a process approach to writing. Grammatical structures worked on include parts of speech, vocabulary usage, compound and complex sentences, and correct usage of all verb tenses, including perfect tenses. Students use word processing skills. (F, Sp)

ESLP 036 Communication Skills III 4**Prerequisite:** ESLP 023 2.0 minimum or ESLP 026 2.0 minimum or Placement Test

Designed for high intermediate level non-native speakers of English. Instruction focuses on improving listening comprehension and oral communication skills through group discussions, oral presentations, and projects. Grammar instruction is integrated into the themes for each unit. (F, Sp)

ESLP 101 Vocational Preparation 4**Prerequisite:** ESLP 031 2.0 minimum or ESLP 034 2.0 minimum or Placement Test

This course is designed for advanced level non-native speakers of English who wish to pursue a certificate program of improve their English for work-related goals. Work-related topics will be used to foster the development of language skills. Emphasis will be on improving listening comprehension, oral communication, and reading comprehension. (F, Sp)

ESLP 102 Comp for Bus and Tech Purposes 4**Prerequisite:** ESLP 032 2.0 minimum or ESLP 035 2.0 minimum or Placement Test

This course is designed for advanced level non-native speakers of English who will use English for business or technical purposes using a variety of complex sentences and grammatical structure. Students will use a process approach to produce business letters of various types, short reports, and memos. (F, Sp, Su)

ESLP 103 Focus on Pronunciation 4**Prerequisite:** ESLP 033 2.0 minimum or ESLP 036 2.0 minimum or Placement Test

This course is designed for advanced level non-native speakers of English who wish to improve the intelligibility of their speech. Students will have an individual speech profile. Emphasis will be on building awareness of and practicing American English stress, intonation, and rhythm patterns, and clear pronunciation of individual sounds. (F, Sp, Su)

ESLP 110 Bridge to Academic Reading 4**Prerequisite:** ESLP 031 2.0 minimum or ESLP 034 2.0 minimum or Placement Test

Designed for low-advanced level non-native speakers of English needing to prepare for reading college-level texts. Emphasis on building teamwork skills, vocabulary, and developing reading strategies and skills to improve overall comprehension. A basic skill reading level 3 is granted upon successful completion of this course. (F, Sp)

ESLP 113 Academic Listening/Notetaking 4**Prerequisite:** ESLP 033 2.0 minimum or ESLP 036 2.0 minimum or Placement Test

This course is designed for advanced level non-native speakers of English who wish to pursue an academic degree or transfer program. Emphasis will be on improving overall listening comprehension, identifying the organizational structure of academic lectures, taking effective notes from a variety of sources, and improving vocabulary. (F, Sp)

ESLP 114 Academic Reading Skills 4**Prerequisite:** ESLP 110 3.0 minimum or Reading Level 3

Designed to prepare advanced level non-native speakers of English for future academic success. Emphasis is on vocabulary building and developing reading strategies and skills, including critical reading for efficient processing of general academic texts. Basic skills reading level 5 is granted upon successful completion of this course. (F, Sp, Su)

ESLP 115 - Composition Academic Purposes 4

Prerequisite: ESLP 032 2.0 minimum or ESLP 035 2.0 minimum or Writing Level 2

Designed to prepare advanced level non-native speakers of English for future academic success. Students use a process approach to writing to produce various types of essays using a variety of complex sentences and grammatical structures. Basic skills writing level of 4 is granted upon successful completion of this course. (F, Sp, Su)

ESLW - English as a Second Language Workshop**ESLW 020 ESL Summer Workshop 6**

Prerequisite: Placement Test

This integrated skills course is designed for low to high intermediate non-native speakers of English who wish to improve their oral-communication, writing, and reading skills through in-class activities, guest lecturers, and field trips. Students in this class will form cooperative learning groups to work on a variety of projects. (F, Sp, Su)

ESLW 021 ESL Fall Workshop 4

Prerequisite: Placement Test

Designed for low to high intermediate non-native speakers of English who wish to improve listening, speaking, reading and writing skills using themes presented in video episodes or readings. Language learning is encouraged through cooperative group activities, interviews, role plays, oral presentations, and projects. May be repeated once for credit. (F, Sp, Su)

ESLW 022 ESL Spring Workshop 4

Prerequisite: Placement Test

Continuation of ESLW 021. Designed for low to high intermediate non-native speakers of English who wish to improve listening, speaking, reading and writing skills using themes presented in video episodes or readings. Language learning is encouraged through cooperative group activities, interviews, role plays, oral presentations, and projects. (Sp)

FILM - Film Production and Direction**FILM 118 Film Production I 4**

Prerequisite: None

Introduces storytelling practices using moving pictures. Students will learn to plan and produce short movies, and develop basic skills in plot structure, pre-production, directing, staging scenes, videography, cinematography, non-linear computer editing, traditional film editing, and audience evaluation. (F, Sp, Su)

FILM 203 Topics in Film/Animation 3

Prerequisite: None

Provides students with basic photographic skills, an opportunity for intensive study in selected aspects of motion picture production, or multimedia production. (F, Sp, Su)

FILM 220 Screenwriting 3

Prerequisite: WRIT 121 2.0 minimum or Writing Level 3

Recommended: FILM 118

An introductory course in screenwriting. Students will learn the structure and format of screenplays, including plot development and creation of well-built characters. Real-life considerations of script marketing and relevant practices will also be covered. Those wishing to do advanced work may take an additional semester for credit. (F, Sp)

FILM 226 Film Production II 4

Prerequisite: FILM 118 2.0 minimum or IMAG 118 2.0 minimum

An intermediate-level course that exposes the student to advanced storytelling practices using sound and images. Hands-on production exercises help the student to develop skills in script writing, storyboarding, production planning, photography, animation, editing, and sound track production. Emphasis on Avid nonlinear editing techniques. (F, Sp)

FILM 227 Film Production III 4

Prerequisite: FILM 118 2.0 minimum or IMAG 118 2.0 minimum

Storytelling practices emphasizing dialog. Hands-on production exercises develop skills in script writing, production planning, sync sound recording and editing, and working with actors and crew members. Students work individually and as group members, and apply critical thinking and problem-solving processes to produce effective communications programs. (F, Sp)

FILM 281 Motion Picture Internship 3

Prerequisite: (FILM 226 2.0 minimum or IMAG 226 2.0 minimum) and (FILM 227 2.0 minimum or IMAG 227 2.0 minimum)

Restriction: Motion Picture Production and Motion Picture Direction Majors
An off-campus field study. Students will gain pre-career experience by working in a motion picture production environment under the supervision of a professional producer or technician. Regularly scheduled progress reports will be given and discussed with a supervising faculty member. Students work a minimum of 160 hours per semester. (F, Sp, Su)

FILM 290 Motion Picture Portfolio 4

Prerequisite: (FILM 226 2.0 minimum or IMAG 226 2.0 minimum) and (FILM 227 2.0 minimum or IMAG 227 2.0 minimum)

Restriction: Motion Picture Production and Motion Picture Direction Majors
The student will produce a motion picture, demonstrating technical and creative proficiency, under instructor supervision, suitable for presentation for the purpose of securing employment. This course is intended to be the capstone course in the Motion Picture Program. (F, Sp, Su)

FIRE - Fire Science**FIRE 100 Introduction to Fire Fighting 3**

Prerequisite: None

An introduction to fire fighting with an overview of fire chemistry, fire fighting equipment and safety, types of department, apparatus, special techniques of rescue, future of fire service, customer service, fire prevention, and public education. (F, Sp)

FIRE 101 MI F.F.T.C. Basic Fire Lev I 9

Prerequisite: Admission to Fire Academy

Level I is basic training required for all firefighters in the State of Michigan. Training is certified by the Michigan Fire Fighters Training Council and includes the basics of fire suppression, apparatus operation, life safety, and physical fitness. (F, Sp, Su)

FIRE 102 MI F.F.T.C. Basic Fire Lev II 4

Prerequisite: FIRE 101 2.0 minimum or Concurrently

Level II is basic training required for all career firefighters in the State of Michigan. Training is certified by the Michigan Fire Fighter's Training Council and includes advanced fire suppression, aerial operation, life safety, and physical fitness. (F, Sp, Su)

FIRE 110 Fire Prevention and Law 3

Prerequisite: None

This course identifies applicable statutes of Michigan Law as they relate to the Fire Service. Covers selected portions of NFPA 101, the Life Safety Code, appropriate portions of BOCA, and other building codes. Focuses on the importance of an aggressive fire prevention plan in communities. (F)

FIRE 115 Building Construction/Fire Ser 4

Prerequisite: None

This course involves the essentials of building design and construction for the fire service with emphasis on life safety, evacuation, fire extension, and collapse. (F)

FIRE 120 Chemistry/Hazardous Materials 3

Prerequisite: None

A college-level chemistry course focusing on hazardous materials encountered by fire fighters. Contains specific elements of NFPA 741, 742 and OSHA CFR 1041.120. Topics include atomic and molecular theory, bonding property of elements, oxidation and reduction reactions, kinetic-molecular theory, solutions, and electrochemistry. Includes Michigan Haz-Mat First Responder Certification. (F)

FIRE 125 Fire Protection Sys/Equipment 4

Prerequisite: None

Identifies suppression agents, suppression equipment, and fixed systems typically encountered by fire fighters responding to commercial/industrial complexes or specialized environments. Emphasizes selected portions of detection and alarm, sprinklers and standpipes, and special systems and design covered by the appropriate NFPA standards. (F)

FIRE 130 Fire Hydraulics/Pump Operation 4

Prerequisite: MATH 050 2.0 minimum or Math Level 4

Describes the fundamentals of hydraulics, including water supply problems, standards and pump requirements, and practical application of knowledge to fire fighting problems. Includes selected portions of NFPA 1901 and 1002. (Sp)

FIRE 150 Fire Command and Operations 4**Prerequisite:** None**Recommended:** FIRE 102 or Firefighter

This course centers on the initial fireground attack from a company officer's perspective. Deals separately with Engine and Truck Company Operations including initial assignments, use of resources, rescue, streams, and salvage. Covers selected portions of NFPA 1002, 1410, 1904, and 1961. Covers the National Fire Academy Incident Command System. (Sp)

FIRE 210 Fire Investigation 4**Prerequisite:** None**Recommended:** FIRE 101 or Firefighter

This course investigates fire behavior, importance of determining cause and origin, accidental, incendiary, or arson type fires. Describes methods of recognizing and identifying motivation for arson and covers applicable laws and court procedures. (Sp)

FIRE 220 Hazardous Materials/Fire Ser 4**Prerequisite:** None**Recommended:** FIRE 120 or Firefighter

Explores the concepts and methods of detection, control, and mitigation of hazardous materials incidents. Contains specific elements of NFPA 741, 742, and OSHA CFR 1041.120. Includes Michigan Haz-Mat Operations Level Certification. (Sp)

FIRE 250 Fire Administration 4**Prerequisite:** None**Recommended:** FIRE 150 or Firefighter

This course provides the student with a better understanding of motivation and the proper reaction from management. Covers labor relations and collective bargaining, fiscal management, and political interaction. Presents modern approaches to the challenges which face today's fire executives. (Sp)

FLNG - Foreign Language**FLNG 295 Ind Study in Foreign Language 1-4****Prerequisite:** Department Approval

An opportunity for self-directed learners to explore topics related to, but not taught in the curriculum. Students spend at least two hours per week for each credit. A detailed proposal must be submitted by the student for approval by the Department and supervising instructor prior to registration. (F, Sp, Su)

FREN - French**FREN 115 Conversational French I 3****Prerequisite:** None

Students learn how to communicate orally in everyday life situations and in travel abroad. Emphasis is on the development of ability to communicate in French. French culture is explored. (F, Sp, Su)

FREN 116 Conversational French II 3**Prerequisite:** None**Recommended:** FREN 115 or Equivalent

Continuation of FREN 115. Designed for advanced beginners who wish to improve their speaking ability in the context of daily living. Emphasis is placed on contemporary vocabulary, essentials of grammar, and pronunciation through class discussions conducted in French. Students will continue to explore different aspects of life and culture in the francophone world. (F, Sp, Su)

FREN 121 Elementary French I 4**Prerequisite:** Reading Level 5

Introductory course open to students with little or no knowledge of French. Students are introduced to basic patterns and structures of French, enabling them to develop listening, speaking, reading, and writing skills. Emphasis is placed on contemporary vocabulary, essentials of grammar, and pronunciation. (F, Sp, Su)

FREN 122 Elementary French II 4**Prerequisite:** FREN 121 1.5 minimum and Reading Level 5

Second course of a two-semester sequence in Elementary French. Introduction to more complex structures and patterns, and more active use of spoken and written French. (Sp)

FREN 201 Intermediate French I 4**Prerequisite:** FREN 122 1.5 minimum and Reading Level 5

First course of a two-semester sequence. Course provides grammar review, vocabulary building, listening comprehension, composition writing, group discussions, and readings of literary and cultural texts, short stories, and news articles for a better understanding of the francophone world. (F)

FREN 202 Intermediate French II 4**Prerequisite:** FREN 201 1.5 minimum and Reading Level 5

Second course of a two-semester sequence. Course includes a review of more complex grammar topics, readings of cultural and literary texts, short stories, and newspaper articles for a better understanding of the francophone world. Students will improve fluency through listening-comprehension, writing, and discussions in the target language. (Sp)

GEOG - Geography**GEOG 120 Introduction to Geography 3****Prerequisite:** Reading Level 5**Recommended:** WRIT 121

An introductory course designed to provide contemporary geographic ideas and mapping techniques to study the interaction between people and their physical environment. Selected topics include soils, land forms, water, climate, natural vegetation, agriculture, urbanization, demographic patterns and resource utilization. (F)

GEOG 121 Physical Geography 3**Prerequisite:** Reading Level 5**Recommended:** Word Software Experience

Emphasizes landforms, natural vegetation, weather and climatic elements, and soils. Offers an extensive study of these forces, noting their ecological principles and their effects on human life. Includes computer mapping techniques, land site analysis, and air-photo interpretation. (F, Sp, Su)

GEOG 200 World Regional Geography 4**Prerequisite:** Reading Level 5

This course describes and analyzes human relationships with the natural and cultural environment and examines the physical and cultural aspects of the major regions of the world. International interdependency is examined to promote global awareness. (F, Sp, Su)

GEOG 202 Geography of North America 3**Prerequisite:** Reading Level 5

A study of the human and physical aspects of North America. This course will identify some of the factors that influence the quality of life and give character to each of the various subregions. (Sp)

GEOG 203 Economic Geography 3**Prerequisite:** Reading Level 5

The study of the distribution of economic activities throughout the world. Emphasizes agriculture, resources, population, industry, urbanization, and trade. (Sp)

GEOG 295 Independent Study in Geography 1-4**Prerequisite:** Department Approval

An opportunity for self-directed learners to explore topics related to, but not taught in the curriculum. Students spend at least two hours per week for each credit. A detailed proposal must be submitted by the student for approval by the Department and supervising instructor prior to registration. (F, Sp, Su)

GEOL - Geology**GEOL 210 Geology Field Studies 1-3****Prerequisite:** None

Opportunities to gain geology field experience through application of skills learned in the classroom. One-day and extended overnight excursions are offered. (Destination examples: Michigan gypsum mines, Michigan Upper Peninsula iron and copper country, Cincinnati fossil beds, Grand Ledge quarries, Western U.S. regional geology, etc.) (Su)

GEOL 221 Physical Geology 4

Prerequisite: Reading Level 5 and Writing Level 4 and Math Level 4
 This course investigates the dynamic physical earth using a cause-effect theme, and emphasizes relationships of geologic cycles (tectonic/hydrologic) to modifications of earth's crust (e.g., volcanism, mountain building, rivers, glaciers) with introduction to environmental topics and earth resources. Laboratory includes mineral and rock identification, topographic and geologic map interpretation, and plate tectonics exercises. (F)

GEOL 222 Historical Geology 4

Prerequisite: Reading Level 5 and Writing Level 4 and Math Level 4
 Plate tectonics is used to integrate crustal and organic evolution in the dynamic global system. Includes methods of geologic inquiry and critical evaluation of evidence. Laboratory stresses interpretation of the rock and fossil records, reconstruction of past ecosystems, geologic maps, and plate tectonics' influence on the environment. (Sp)

GEOL 230 Environmental Geology 4

Prerequisite: Reading Level 5 and Writing Level 4 and Math Level 4
 Concepts of physical geology are applied to human interaction with the environment. Geologic resources (e.g., minerals, energy, and water) and hazards (e.g., earthquakes, landslides, and flooding) are explored. Laboratory includes rock and mineral identification, map reading and interpretation, evaluation of land use alternatives, and problem-solving activities related to environmental issues. (F)

GERO - Gerontology

GERO 100 Introduction to Human Aging 3

Prerequisite: Reading Level 5 and Writing Level 4
 This course provides a basic orientation to the field of gerontology with emphasis on social aspects: demography, physiology, psychology, sociology, economics, environment, death and dying, and community and government programs. (F, Sp)

GERO 101 Programs/Services for Aging 3

Prerequisite: None
Recommended: GERO 100
 This course provides a description of the organization and functions of the aging services network, its relationship to the broader human services system, and how the services worker can use or develop community resources for the benefit of older adults. (Sp)

GERO 119 Age Process: Facts/Myths/Chngs .25

Prerequisite: None
 This course includes an overview of facts and myths associated with older adults, including normal physical changes and their implications; social/emotional aspects of aging, including communication issues; and federal, state, and local resources for the older adult. (F, Sp)

GERO 131 Pln for Older Adlts w/Dev Dis .5

Prerequisite: None
 This course presents an overview of the older adult with developmental disabilities including characteristics, demographics, public policy issues, and functional assessment. Michigan program initiatives are discussed and case studies are presented. (F, Sp)

GERO 161 Issues of Aging: Sexuality .25

Prerequisite: None
 This course presents an overview of issues relating to sexuality and older persons. Topics are societal attitudes, sexual behavior patterns, physiological changes, psychological responses, and special situations, such as institutional settings. (F, Sp)

GERO 164 Med & Alcohol Use/Older Adults .5

Prerequisite: None
 This course examines medication and alcohol use among older adults including prescription and nonprescription medicines, side effects, drug interactions, and strategies for using medicines wisely. Students learn to identify a substance abuse situation and how to make appropriate referrals. (F, Sp)

GERO 165 Dementia: Concepts and Causes .5

Prerequisite: None
 This course is an introduction to current concepts of dementia (Alzheimer's disease and related disorders) in older persons. It provides an overview of social, physical, psychological, and environmental factors resulting in dementia. Relationships to depression, techniques for communicating with older persons with dementia, family dynamics, and community resources are discussed. (F, Sp)

GERO 169 Legal Rights of Older Adults .5

Prerequisite: None
 This course focuses upon issues such as guardianship, conservatorship, power of attorney, the living will, joint tenancy, nursing home residency, and civil commitment, including actual and perceived choices a person has as aging and illness occur. (F, Sp)

GERO 170 Depression: Recog & Treatment .5

Prerequisite: None
 This course provides an examination of depression in later life. Symptoms, causes, "masks," diagnosis, and assessment of depression are introduced, including information on distinctions between depression and dementia. Basic techniques and guidelines for working with depressed older persons are presented. (F, Sp)

GERO 171 Tech: Care for Persons w/Demen .75

Prerequisite: None
 This course provides an introduction to techniques for working with older adults with Alzheimer's disease and related disorders. The psychosocial needs of individuals and their families are a primary focus. Communication techniques, programming approaches, handling problem behaviors, a task breakdown approach, environmental adaptations, and role of the family are discussed. (F, Sp)

GERO 173 Activ: Older Adlts w/Alzheim .5

Prerequisite: None
 This course provides an overview of planning principles and processes effective in designing meaningful activities for older adults with Alzheimer's disease and related disorders. Practice opportunities are included. (F, Sp)

GERO 191 Seminar: Special Subjects .25-.5

Prerequisite: None
 This course consists of a series of seminars which address the most current issues in the field of gerontology. The seminars are designed to provide the most up-to-date information on selected, high-interest subjects concerning human aging. (F, Sp, Su)

GERO 203 Physical/Mental Health Aging 3

Prerequisite: GERO 100 2.5 minimum or Concurrently
 Physical and mental health of older adults is examined from an applied perspective for human services providers. Topics include normal and pathological changes; family and social factors; skills and adaptations for maintaining good physical health; assessment; intervention and skills for helping older adults access appropriate treatment in the health care system. (F)

GERO 282 Gerontology Practicum I 4

Prerequisite: SOWK 203 2.5 minimum and (WRIT 121 2.0 minimum or WRIT 131 2.0 minimum) and Department Approval
Recommended: GERO 100 and GERO 101 and GERO 203 and HUSE 101 and Human Services Experience

This course combines classroom training with field placement (10 hours per week) at a community agency or institution serving older persons. Students apply learning about structure, funding, and organization of aging services; explore community resources; demonstrate appropriate work habits; assess their attitudes and career skills in gerontology, and relate current aging research to practice. (F)

GERO 284 Gerontology Practicum II 4

Prerequisite: GERO 282 2.5 minimum
 This course provides advanced field placement experience at a community agency or institution serving older persons (10 hours per week), combined with classroom training in practice concepts related to service delivery to older persons. Students learn resources and systems, develop networking skills, mobilize resources on behalf of older individuals or groups, and demonstrate their suitability for a career in gerontology. (Sp)

GRET - Geographic Information Systems

GRET 203 Beginning MicroStation 3

Prerequisite: None
Recommended: LAND 282 or Basic CAD Experience
 This entry-level, computer-aided design and drafting course uses MicroStation software on an Intergraph workstation or PC. Students will create 2-D drawings using basic graphic tools and procedures. (F, Sp)

GRET 204 MicroStation Graphic Environ 3	GRET 243 ORACLE/Geographic Info Sys 3
Prerequisite: GRET 203 2.0 minimum This course explores the MicroStation graphic environment using the Intergraph Workstation. The analysis package, MGA, will be utilized as well. The development of a prototype Geographic Information System will be a highlight of this course. (Sp)	Prerequisite: None This course will cover the components of ORACLE needed to build a database for GIS applications. This is a hands-on computer course. Sample databases will be demonstrated. Students will construct several databases that apply to the GIS coverage layers. (F)
GRET 205 Principles Geographic Info Sys 3	GRET 248 GIS/GPS Field Systems 3
Prerequisite: None This course describes the components of a basic GIS and how they are assembled. Requisition of data, maps, and other information used to build a database will be highlighted. A basic pilot project will be demonstrated step-by-step through various applications in GIS. (F, Sp, Su)	Prerequisite: None MicroStation Analyst (MGA) is an advanced software package dealing with GIS. MGA, which generates topologically-structured files from design files for use in performing spatial analysis. It will also cover system query sets and answers to questions posed to topological files. (F, Sp)
GRET 210 Global Positioning Systems 3	GRET 253 Basics of ARC/View 3
Prerequisite: None This course covers the basic principles necessary to set up, operate, and run a Global Positioning System (GPS) receiving station, as well as collect information with a receiver. Data collection will be incorporated into a computer database program. The information link with Geographic Information Systems (GIS) and the use of GPS in GIS will be demonstrated. (F, Sp)	Prerequisite: None This course is an overview and introduction to the ARC/View software. Also covered are the basic components of a viewing program and its applications in GIS. Various demonstrations will be presented and project examples highlighted. Hands-on computer exercises will be completed. (F, Sp)
GRET 211 Geomedia-Internet GIS 3	GRET 255 Beginning ARC/Info 3
Prerequisite: None This course covers the basics of computer mapping systems and how they relate to computer design, graphics, and GIS. C-Map, Map Info., and Mapping Office will be presented. Students will produce a variety of maps as they relate to daily activities, land planning, environmental geography, and information systems. (Sp)	Prerequisite: None Recommended: Computer Experience This course will be an introduction to the use of the ARC/INFO software. ARC/INFO is a leading product used in the design of Geographic Information Systems. Basic product use and modeling will be demonstrated. There will be hands-on experience in the lab. (F, Sp, Su)
GRET 213 Advanced MicroStation 3	GRET 256 Advanced ARC/Info 3
Prerequisite: GRET 203 2.0 minimum This course is an advanced application of the MicroStation Software and deals with 3-D and other advanced aspects of this computer-aided drafting and design package. A basic understanding and/or beginning MicroStation class is necessary for success in this class. (Sp)	Prerequisite: GRET 255 2.0 minimum This course advances the techniques acquired in the beginning ARC/INFO class. The student will learn additional modules and advanced application of modules such as GRID and TIN. The student will also develop projects using data sets. Students will develop a complete GIS project utilizing the full ARC/INFO module. (Sp)
GRET 220 Hydrological Systems 3	GRET 258 ARC/View Extensions G.I.S. 3
Prerequisite: None This course will cover the various aspects of water resources as they pertain to the geographic information system environments. Water systems, natural and man-made, will be emphasized. The evaluation, analysis, and environmental impacts of various water features as they pertain to environmental research and development will be highlighted. (F)	Prerequisite: GRET 253 2.0 minimum This course will cover the basic software extensions to the ArcView package. Students will learn the basic commands for the various ArcView extensions. Spatial analysis and network analysis extensions will be highlighted. A GIS project will be completed utilizing all of the various software packages. (Sp)
GRET 221 Landforms/Soil Systems in GIS 3	GRET 265 Analysis Applications in GIS 3
Prerequisite: None This course will discuss the important classifications of landform and soil systems. The relevance of these systems in the GIS environment will be highlighted. The importance of these systems in the information processing, land use, land planning, site design, and landscape form arenas will be emphasized. (Sp)	Prerequisite: GRET 204 1.0 minimum or GRET 255 1.0 minimum This course expands upon the techniques, methods, and processes involved in developing a full GIS program. Different GIS software packages will be explored, as well as related databases and completed projects. (Sp)
GRET 223 Environmental Resource Mgmt 3	GRET 266 Project Design in GIS 3
Prerequisite: None This course will cover the broad spectrum of environmental resources such as forestry, agriculture, mining, soils, vegetation, and their impact and management in current computer information systems. Resources in the land planning disciplines will be highlighted as to their function in the present environmental processes, both public and private. (Sp)	Prerequisite: GRET 204 1.0 minimum and GRET 205 1.0 minimum and GRET 255 1.0 minimum This course specifically deals with all of the possible application areas for GIS, both present and future. Project application areas such as toxic materials, traffic flow, mining, forestry, natural resource, energy, and communication will be highlighted. A semester-long application project of your choice will be developed on the computer. (Sp)
GRET 240 Cartography in GIS 3	GRET 295 GRET Project Lab 1-4
Prerequisite: None The basic principles, functions, and origins of maps will be discussed. The student will construct various types of maps. Computer-offered map planning and design along with how to read, print, and design maps will also be covered. (F)	Prerequisite: Department Approval This project lab is designed for students who wish to pursue a specialty area in GIS beyond that which is offered in our curriculum. Inquiry through research and design is required. (F, Sp, Su)
GRET 241 Remote Sens/AirPhoto Interpret 3	GRMN - German
Prerequisite: None This course will include the development of skills necessary for basic interpretation of aerial photography data, how it is collected, and the ability to analyze maps created from the data collected in this method. The current technology and GIS relationship will be highlighted. (Sp)	GRMN 115 Conversational German I 3
	Prerequisite: None The first course in a two-semester sequence for persons with little or no knowledge of German. Emphasizes listening and speaking skills. Students learn correct pronunciation, essential language structures, and a practical vocabulary applied in conversational exchanges. Aspects of German culture are introduced through multimedia presentations. (F, Sp, Su)

- GRMN 116 Conversational German II** 3
Prerequisite: None
Recommended: GRMN 115 or Equivalent
 The second course in a two-semester sequence for persons with little or no knowledge of German. Emphasizes listening and speaking skills. Students learn correct pronunciation, essential language structures, and a practical vocabulary applied in conversational exchanges. Aspects of German culture are introduced through multimedia presentations. (F, Sp, Su)
- GRMN 121 Elementary German I** 4
Prerequisite: Reading Level 5
 First course of a two-semester sequence in elementary German. This course offers systematic practice in the four basic language skills: listening comprehension, speaking, reading, and writing. Communicative approach is combined with a solid grammar foundation, as well as familiarization with contemporary life and culture in Germany, Austria, and Switzerland. (F)
- GRMN 122 Elementary German II** 4
Prerequisite: GRMN 121 1.5 minimum and Reading Level 5
 Second course of a two-semester sequence in elementary German. This course offers more advanced practice in the four basic language skills: listening comprehension, speaking, reading, and writing. Communicative approach is combined with more complex structure as well as familiarization with contemporary life and culture in Germany, Austria, and Switzerland. (Sp)
- GRMN 201 Intermediate German I** 4
Prerequisite: GRMN 122 1.5 minimum and Reading Level 5
 First course of a two-semester sequence in intermediate German. Students receive intensive practice in the basic skills: speaking, listening comprehension, reading, and writing. Course includes a thorough review of German grammar, 20th century short story readings, composition writing, and German culture. Class is taught mainly in German. (F)
- GRMN 202 Intermediate German II** 4
Prerequisite: GRMN 201 1.5 minimum and Reading Level 5
 Second course of a two-semester sequence in intermediate German. Students receive advanced practice in the basic skills: speaking, listening comprehension, reading, and writing. Course includes a thorough review of advanced structures, short story readings, a short novel, composition writing, and German culture. Class is taught mainly in German. (Sp)

HIST - History

- HIST 150 African-American History** 4
Prerequisite: Reading Level 5
 Traces the developments which led to the African slave trade, the slave systems in North and South America, the cultural heritage of the African American in the Americas, and the problems of race in North American culture. (Sp)
- HIST 210 Studies in American History** 4
Prerequisite: Reading Level 5
 Covers problems of research, writing, philosophy, and interpretation of history, involving a detailed examination of a particular area of American history. (Su)
- HIST 211 U.S. History to 1877** 4
Prerequisite: Reading Level 5 and Writing Level 6
 A political, legal, economic, social and cultural history of the United States from colonial beginnings to 1877. (F, Sp, Su)
- HIST 212 U.S. History: 1877 To Present** 4
Prerequisite: Reading Level 5 and Writing Level 6
 A political, legal, economic, social, and cultural history of the United States from the end of reconstruction to the present. (F, Sp, Su)
- HIST 214 African History** 4
Prerequisite: WRIT 121 2.0 minimum or WRIT 131 2.0 minimum or (Reading Level 5 and Writing Level 6)
 Surveys African history with emphasis on pre-colonial and colonial Africa, nationalism and the struggle for independence, colonialism and economic development/underdevelopment, and cultures and traditions as factors in development. Covers some of these topics in three other countries of the Third World (e.g., Brazil, Pakistan, and Indonesia). (F)

- HIST 220 Michigan History** 4
Prerequisite: WRIT 121 2.0 minimum or WRIT 131 2.0 minimum or (Reading Level 5 and Writing Level 6)
 A survey of the political, economic, and social development of Michigan from pre-colonial times to the present. (F)
- HIST 230 British History** 4
Prerequisite: WRIT 121 2.0 minimum or WRIT 131 2.0 minimum or (Reading Level 5 and Writing Level 6)
 A survey of the political, economic, legal, constitutional, and social forces which shaped British history and society from earliest times to the present with special emphasis on the interactions of British and American institutions, values, and ideas. (Sp)
- HIST 240 Latin American History** 4
Prerequisite: Reading Level 5
Recommended: WRIT 121 or WRIT 131 2.0 minimum
 A survey of the history and culture of Latin America from pre-Columbian civilizations to the present. This course will examine political, social, and cultural developments in Latin America and assess the role of colonialism, nationalism, and world economic trends in shaping Latin American countries. (Sp)
- HIST 250 History of Modern Asia** 4
Prerequisite: Reading Level 5
Recommended: WRIT 121 or WRIT 131 2.0 minimum
 This course will survey political, social, and economic developments as well as principal cultural trends in the major civilizations of Asia (excluding Western Asia) from approximately the 17th Century to the present. The course will also include an examination of the interactions among Asian societies and between Asia and the West. (F)
- HIST 260 Conflict & Revolu Southrn Africa** 4
Prerequisite: Reading Level 5
Recommended: WRIT 121 or WRIT 131
 Study of historical-cultural origins and contexts of conflicts in Zimbabwe and Southern Africa with emphasis on socioeconomic causes of conflicts, cultural differences and conflicts, problems of development as sources of conflicts, inter-African conflicts, settler-African conflicts, international dimensions of conflicts, and solutions to conflicts. (Sp, Su)
- HIST 263 Seminar: Russia and the CIS** 3
Prerequisite: None
 A survey of Russia and its people from the Russian Revolution of 1917 to the present. Also examined will be the multinational character of the former USSR and the forces that shaped Soviet history, society, and politics, including U.S.-Soviet relations. (Su)
- HIST 265 Sem: American Legal Tradition** 3
Prerequisite: None
 A historical survey of the origins, growth, and development of the American legal-constitutional process. The legal system is studied in the context of American culture by examining the leading cases, philosophies, scholars and institutions, and approaches to the study of law. (Su)
- HIST 295 Independent Study in History** 1-4
Prerequisite: Department Approval
 An opportunity for self-directed learners to explore topics related to, but not taught in the curriculum. Students spend at least two hours per week for each credit. A detailed proposal must be submitted by the student for approval by the Department and supervising instructor prior to registration. (F, Sp, Su)

HMFS - Hotel/Motel and Food Services Operations

- HMFS 101 Intro Hospitality/Tourism** 3
Prerequisite: Reading Level 3 and Writing Level 4
 Career opportunities in various types of hotels, restaurants and tourism operations are discussed; includes trends and explains the importance of the various segments as they work together to provide quality guest service. (F, Sp, Su)
- HMFS 110 Sanitation and Safety** 3
Prerequisite: None
 Safe food handling, prevention of food spoilage, and transfer of bacteria, maintenance of equipment and facilities, and importance of good personal hygiene in the work place are discussed; HACCP explained. OSHA laws described and illustrated. Includes examinations for national and state sanitation. (F, Sp, Su)

HMFS 131 Food and Beverage Management	4	HMFS 185 Practicum in Japanese Culture	3
Prerequisite: HMFS 101 2.0 minimum or Concurrently		Prerequisite: None	
Recommended: HMFS 110 2.0 minimum		Introducing the principles and philosophy of Japanese calligraphy and the use of abacus and understanding of various types of Japanese traditional dresses. Practical training in calligraphy and abacus. (F, Sp, Su)	
Overview of food preparation with focus on management issues and quality. Includes laboratory activities to practice safe operation of equipment, to plan, prepare, serve and manage complete meals for public consumption. Cost controls, purchasing, and beverage management discussed. (F, Sp)			
HMFS 132 Food Production	4	HMFS 190 Internship and Seminar	3
Prerequisite: HMFS 110 2.0 minimum or Concurrently and HMFS 131 2.0 minimum		Prerequisite: HMFS 101 2.0 minimum or TRVL 150 2.0 minimum	
Recommended: Minimum 2.0 in HMFS 101 and HMFS 135		Recommended: Minimum 2.0 in HMFS 131 and HMFS 204	
Advanced food preparation procedures with guidelines on organization of food and beverage production. Food purchasing and proper storage prior to production is examined. Includes terminology, theory, planning, organization, productivity techniques, costing, purchasing, sales, service and management of meals for public consumption. (F, Sp)		Hands-on experience in an operating food service facility, lodging property or travel operation that supplements and illustrates classroom discussions of principles, techniques and procedures commonly practiced in the industry. Development of professional portfolio included plus a minimum of 200 hours of approved paid work experience. (F, Sp)	
HMFS 134 Nutrition and Healthy Eating	3	HMFS 203 Hospitality Law	3
Prerequisite: None		Prerequisite: HMFS 101 2.0 minimum or Concurrently	
Eating out sensibly discussed plus explanation of nutrients and their role in maintaining health. Examination of food patterns, weight control and maintaining a healthy lifestyle with reasonable exercise. Includes nutritional analysis of 24-hour food consumption. (F, Sp)		Recommended: Minimum 2.0 in HMFS 131 and/or HMFS 206	
HMFS 135 Hospitality Purchasing	3	Legal problems and issues commonly faced in hospitality operations including rights and responsibilities of innkeepers, restaurants, caterers, and other food establishments, guest relationships, guest property rights, frauds, employment safety, tax and liquor laws. Current court cases discussed. (Sp)	
Prerequisite: HMFS 101 2.0 minimum or Concurrently		HMFS 204 Hospitality HR Management	3
Recommended: HMFS 131 2.0 minimum		Prerequisite: None	
Responsibilities of a purchasing agent and role with vendors in an effective purchasing program are explained; focus on writing specifications, purchasing for all categories of foods and supplies, cutting test procedures and standard receiving practices. Emphasis on how to make effective managerial purchasing decisions. (F)		Recommended: HMFS 101 and HMFS 170 and HMFS 203	
HMFS 137 Catering Management	4	Supervisor's role as a leader, coach and personnel manager; topics include managing culturally diverse workers plus recruitment, selection, orientation, training, evaluating, and disciplining employees. Discussion on retaining employees, sexual harassment, and worker motivation. (F, Sp)	
Prerequisite: None		HMFS 205 Hospitality Management	3
Recommended: Minimum 2.0 in HMFS 110 and HMFS 132 and HMFS 135		Prerequisite: HMFS 101 2.0 minimum or Concurrently	
Sequential steps to successful catering are presented from determining client needs, planning of menus, purchasing, costing and pricing events establishing equipment requirements, examining both on and off-premise functions, recognizing sanitation concerns, and designing contractual agreements with clients. Lab preparation and presentation of a catered event. (Sp)		Recommended: Minimum 2.0 in HMFS 131 and HMFS 203 and HMFS 204	
HMFS 170 Menu Management and Design	3	A survey of management principles and practices in the hospitality industry. Topics include basic financial statements, operating ratios, planning, organizing, directing and controlling related to lodging and food service operations. (F, Sp)	
Prerequisite: HMFS 131 2.0 minimum or Concurrently		HMFS 206 Rooms Division Management	3
Recommended: Minimum 2.0 in HMFS 101 and HMFS 135		Prerequisite: HMFS 101 2.0 minimum or Concurrently	
Design a menu using accurate descriptive terms, calculation of selling prices, layout recommended, selection of fonts and colors. Includes analysis of menus including accuracy (truth in menu), the menu as a marketing tool, and current trends. Semester project included. (F)		Reservation and sale of hotel rooms, operation of front office, review of check-in and check-out procedures, credit card processing, property security, daily audit and the importance of keeping accurate records. Includes yield management and determining room rates, forecasting based on statistical analysis, posting accounts and budgeting. (Sp)	
HMFS 177 Intro Hotel and Food Serv Ops	1	HMFS 215 Hospitality Sales/Marketing	3
Prerequisite: None		Prerequisite: HMFS 101 2.0 minimum or Concurrently	
An introduction to the hotel-motel-food service industry, its management departments, and responsibilities. Designed specifically for Japan Adventure/Horizon students. (F, Sp, Su)		Recommended: Minimum 2.0 in (HMFS 131 and/or HMFS 206) and HMFS 170	
HMFS 180 Japan Adventure Internship	2	Design and evaluation of sales promotions, strategic marketing plans and marketing alternatives; includes techniques for market analysis, needs assessment and creation of packages and joint ventures such as co-branding. Trends in branding and methods to evaluate marketing effectiveness will be discussed. Project included. (F, Sp)	
Prerequisite: None		HMFS 229 Convention/Meeting Management	3
Attend morning meeting each working day. Perform work duties as assigned by the student supervisor(s) and the host company. (F, Sp, Su)		Prerequisite: HMFS 101 2.0 minimum or Concurrently	
HMFS 181 Japan Adventure Internship	2	Recommended: Minimum 2.0 in (HMFS 131 and/or HMFS 206) and HMFS 170	
Prerequisite: None		Determining client needs, evaluating capability of facility and community resources and marketing for convention business is included. Methods of evaluating successful conventions and meetings are examined and the use of software programs to book events and maintain client records. (Sp)	
Attend morning meeting each working day. Perform work duties as assigned by the student supervisor(s) and the host company. (F, Sp, Su)		HMFS 232 Food and Labor Cost Control	3
HMFS 183 Practicum in Japanese Culture	2	Prerequisite: HMFS 131 2.0 minimum or Concurrently and (HMFS 207 2.0 minimum or ACCG 101 2.0 minimum) or Concurrently and Math Level 3	
Prerequisite: None		Recommended: Minimum 2.0 in HMFS 204 and HMFS 205	
Introducing the principles and philosophy of Japanese calligraphy and the use of abacus and understanding of various types of Japanese traditional dresses. Practical training in calligraphy and abacus. (F, Sp, Su)		Strategies for making a profit and controlling food, beverage, and labor costs are examined. Includes discussion of quality versus cost issues and an analysis of records to detect problems. Includes examination of facility management strategies to reduce costs and save energy. Methods for increasing revenues are discussed and evaluated. (F, Sp)	

<p>HMFS 240 Current Topics in Hospitality 3 Prerequisite: (HMFS 131 2.0 minimum and HMFS 205 2.0 minimum) or Concurrently Recommended: Minimum 2.0 in HMFS 203 and HMFS 206 and HMFS 215 Examination of current trends, issues and topics affecting the hospitality industry. Each offering will change emphasis with possible topics such as Internet marketing, projected and pending legislation, casino and resort management, technological advancements, facilities management, leadership development, and industry globalization. (F, Sp)</p> <p>HMFS 251 Wine Appreciation 1 Prerequisite: Must be 21 Years of Age Selection and storage of five basic wine types, how they are made and served; evaluation of wines based on appearance, bouquet and taste. Discussion on food compatibility with comparative taste evaluations. (F, Sp)</p> <p>HMFS 252 Wines of America 1 Prerequisite: Must be 21 Years of Age A study of the wine making industry in America with emphasis on wines from California, New York, Michigan and Ohio. Comparative taste evaluations and discussion of food compatibility. (F)</p> <p>HMFS 253 Wines of France 1 Prerequisite: Must be 21 Years of Age Examine, in depth, the history and regional differences exhibited by the major wine producing areas of France - the world's leader and most famous wine producer. Through tasting, students will travel through the regions of Bordeaux, Burgundy, Champagne, Alsace, Rhone, and Loire River Valley. (Sp)</p> <p>HMFS 254 Mixology 4 Prerequisite: None More than bartending; includes accuracy and efficiency in preparation of many mixed beverages that are explained and demonstrated; includes strategies for controlling over and under pouring, bar management, and theft. Industry standards explained (glassware, garnishing, and service) with emphasis on sanitation issues. Student preparation in laboratory setting. (F, Sp, Su)</p> <p>HMFS 260 Gourmet Basic Cookery 2 Prerequisite: None Recommended: HMFS 110 Beginning basics of menu planning, recipe selection, purchasing of ingredients, correct preparation, and service. Cost issues and sanitation concerns emphasized. Preparation and evaluation of meals included. (F, Sp)</p> <p>HMFS 261 Gourmet Italian Cookery 2 Prerequisite: None Recommended: HMFS 110 Regional and national foods from Italy with specialty menus from each major region. Meal planning, food purchasing, and food preparation included. Local community experts contribute their expertise to the class. Preparation and evaluation of meals included; opening and closing kitchen procedures practiced. (F, Sp)</p> <p>HMFS 263 Gourmet American Cookery 2 Prerequisite: None Recommended: HMFS 110 Explore why the U.S. is considered "the Melting Pot" of the world. During this course, you will travel through 8 different regional cuisines. Sanitation, nutrition, and personal hygiene are essential topics, along with various kitchen safety practices. (F, Sp, Su)</p> <p>HMFS 264 Gourmet Barbecue Cookery 2 Prerequisite: None Recommended: HMFS 110 Innovative approaches to preparing flavorful grilled foods; includes meats, vegetables, hors d'oeuvres, plus salads and desserts. Learn how to create memorable picnics! Preparation and evaluation of meals included; opening and closing kitchen procedures practiced. (F, Sp, Su)</p> <p>HMFS 266 Gourmet Chinese Cookery 2 Prerequisite: None Recommended: HMFS 110 Learn basic techniques in the preparation of popular favorites such as sweet and sour pork, chicken almond ding and egg rolls; emphasis on proper saute' methods and "red" cooking techniques. Preparation and evaluation of meals included for diverse taste, texture, and aroma; opening and closing kitchen. (Sp)</p>	<p>HMFS 268 Gourmet Middle Eastern Cookery 2 Prerequisite: None Recommended: HMFS 110 Unique ingredients and preparation procedures from various Middle Eastern countries are examined and explained. Includes preparation of entrees, side dishes, and desserts followed by detailed evaluations as to quality and customer acceptability. Preparation and evaluation of meals included; opening and closing kitchen procedures practiced. (F, Su)</p> <p>HMFS 270 Vegetarian Cuisine 2 Prerequisite: None This course will examine the growing trend of vegetarian cookery and how it has evolved over the years. Information will be provided on the different types of vegetarian cuisinas, as well as how this has impacted today's lifestyles. Preparation and evaluation of meals included; opening and closing kitchen procedures practiced. (F, Sp)</p> <p>HMFS 272 The Cuisine of India 2 Prerequisite: None This course is designed to explore foods from India, including an introduction to Indian cuisine, its history, indigenous foods, herbs and spices used, and geography. Indian cuisine has a very rich history. Its taste is varied by region being simple, flavorful, colorful, and at times very intense. Preparation and evaluation of meals included; opening and closing kitchen procedures practiced. (F, Sp)</p> <p>HMFS 273 Gourmet Cajun Cookery 2 Prerequisite: None Recommended: HMFS 110 Louisiana is home of Cajun and Creole cooking. Learn how to prepare a variety of recipes from this popular cuisine utilizing different herbs, spices, and techniques. Preparation and evaluation of meals included; opening and closing kitchen procedures practiced. (Sp)</p> <p>HMFS 274 Gourmet Lean Cookery 2 Prerequisite: None Recommended: HMFS 110 Healthy ingredient alternatives examined to reduce the fat, salt, and calories in preparation of a variety of favorite recipes. Includes discussion of food composition and making healthier food choices through improved purchasing decisions. Preparation and evaluation of meals included; opening and closing kitchen procedures practiced. (F, Sp)</p> <p>HMFS 275 Bakery Products 2 Prerequisite: None Recommended: HMFS 110 Learn the roles of each baking ingredient, scaling, mixing, and baking techniques to achieve high quality products. Production of breads, quick breads, pies, cakes, pastries, and cookies made in a commercial bakery. Scratch and convenience lines examined and tested. (F, Sp, Su)</p> <p>HMFS 276 Ice Carving Seminar .5 Prerequisite: None This course is designed to expose the student to the tools, techniques, and skills required to carve a block of ice. The student will be carving from a block of ice before the conclusion of the course. This is a hands-on, one-day course. (F, Sp)</p> <p>HMFS 280 Food Decorating Garnishes 3 Prerequisite: None Recommended: HMFS 110 and HMFS 132 Garnishing and presentation of various cold foods such as canapes, hors d'oeuvres, and vegetable carvings; plus the use of spices, sauces, and dressings. Food sculpting included. Set-up of lunch reception included. Preparation and evaluation of meals included; opening and closing kitchen procedures practiced. (Sp)</p> <p>HMFS 281 Soups and Sauces 3 Prerequisite: None Recommended: HMFS 110 and HMFS 132 Compose several different types of stocks using raw materials. Topics discussed: seasonings in stock, glazes prepared from stocks, preparation of various soups, proper garnish of soups, and major classifications and uses of sauces. (Sp)</p>
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HONR - Honors**HONR 151 Honors Colloquy I** 1

Prerequisite: Honors Program Approval.
Interdisciplinary forum for Honors Program members and other interested students. Includes presentations by experts in such fields as the arts, business, communication, education, humanities, government, mathematics, science, and the social sciences, followed by discussion. Topics concerning international issues, diversity, and technology are often featured. Students write essays reacting to each presentation. (F)

HONR 152 Honors Colloquy II 1

Prerequisite: Honors Program Approval
Interdisciplinary forum for Honors Program members and other interested students. Includes presentations by experts in such fields as the arts, business, communication, education, humanities, government, mathematics, science, and the social sciences, followed by discussion. Topics concerning international issues, diversity, and technology are often featured. Students write three substantive research papers. (F)

HONR 155 Service Learning Practicum 1

Prerequisite: Honors Program Approval
A practicum course requiring a minimum of 32 hours of volunteer service with a community agency of the student's choice and attendance at three classroom discussion sessions. Students will develop practical skills and evaluate their service in terms of its relevance to the community and their educational, career, and life goals. Students may enroll for this course twice. (Sp)

HORT - Horticulture**HORT 100 Field Experiences Horticulture** 2

Prerequisite: None
This course will introduce the student to various aspects of the horticulture profession through discussion, videos, slides, field trips, and guest speakers. Topics will include greenhouse operators, bedding plant growers, nursery growers, sod producers, floral shop operators, retail garden centers, and garden suppliers wholesalers. (Sp)

HORT 102 Intro Ornamental Horticulture 3

Prerequisite: None
An introductory course involving botanical and horticultural principles and practices. Basic plant structures and their functions as well as soil and plant nutrition are discussed. Job opportunities and the role of horticulture will also be covered. Field trips and laboratory experiments will highlight the course. (F, Sp)

HORT 103 Indoor Plants and Flowers 2

Prerequisite: None
This hands-on course will allow the student to work with various aspects of the growth and propagation of typical flowering and foliage plants. The student will grow a collection of plants and explore various horticultural practices with their own plant material in a laboratory setting. (F, Sp)

HORT 105 Pest/Problem Ornamental Plants 2

Prerequisite: None
This course is for the professional or homeowner interested in a knowledge of basic environmental and specific pest problems of trees and shrubs. Problems related to soil, light, water, planting, and fertilizer as well as insects, diseases, and vertebrates will be discussed. Integrated pest management and total plant health concepts will form the basis for problem management. (F, Sp)

HORT 107 Beginning Floral Design 2

Prerequisite: None
This is an introductory course for students interested in learning the principles of floral design. Tools and techniques as well as basic arrangement shapes are learned through hands-on experiences. Students will use fresh, silk, and dried flowers to create traditional and contemporary designs. (F, Sp, Su)

HORT 109 Contemporary Floral Design 2

Prerequisite: None
Recommended: Basic Floral Design Experience
Contemporary floral designs are taught as well as theme arrangements, tools, and techniques. The basic principles of design are reviewed with the student transferring techniques to stylized arrangements. This is a hands-on course with participants working with floral materials each week. (F, Sp)

HORT 110 Wedding Floral Design 2

Prerequisite: None
Recommended: Basic Floral Design Experience
This course is designed for the advanced floral designer who has demonstrated the ability to apply the principles of design. Wedding designs covered include colonial, cascade, crescent, and arm bouquets. This is a hands-on class with students working with floral materials each week. (Sp)

HORT 143 Cut Flower, Foliage, Pot Plant 4

Prerequisite: None
The functional aspects of plant material commonly found in the floriculture industry will be covered. The identification of cut flowers, cut foliage, and potted and foliage plants will be required. A course that would benefit the floral designer, greenhouse grower, or landscape designer. (Sp)

HORT 230 Plant Propagation/Nursery Op 4

Prerequisite: HORT 102 1.0 minimum
This course will cover the basics of plant propagation and nursery operations. It will focus on the process of setup, planting, and follow-up maintenance. The tools and techniques of seed propagation, as well as cuttings, grafting, budding, and layering will be emphasized. Knowledge of plant selection, soils, pruning, harvesting, and marketing nursery products will be included. (F)

HORT 235 Greenhouse Structures/Environ 3

Prerequisite: None
This course is an introduction to the construction and operation of a commercial greenhouse. Types of greenhouses, including construction materials, are discussed. Environmental control such as heating, cooling, and irrigation practices and procedures are presented. In addition, methods of planting, fertilizing, and insect and disease control are also included to provide a basis of knowledge for greenhouse crop production. (F)

HORT 236 Greenhouse Ornamentals 3

Prerequisite: HORT 235 1.0 minimum
This is an advanced course for the greenhouse grower. The course will cover the production techniques for cut flowers, holiday crops, and other greenhouse ornamentals. Topics of discussion will include scheduling and timing crops, spacing, production costs, and cultural practices. (Sp)

HORT 237 Bedding Plant Production 3

Prerequisite: HORT 102 1.0 minimum
An advanced course for the greenhouse grower to produce healthy bedding plants at a profit. Topics will include scheduling, spacing, and production costs as well as cultural practices. New varieties will also be presented. (F)

HORT 238 Garden Center/Nursery Sales 3

Prerequisite: None
This course provides business principles for retail sales managers. A thorough discussion of management topics is presented. Emphasis is placed on planning and organizing a garden center, nursery, greenhouse, or florist operation. Effective pricing and merchandising strategies as well as advertising and display techniques are discussed. (Sp)

HORT 295 Horticulture Project Lab 1-4

Prerequisite: Department Approval
This project lab is designed for students who wish to pursue a specialty area in horticulture beyond that which is offered in our curriculum. Inquiry through research is required. (F, Sp, Su)

HUMS - Humanities**HUMS 120 Western Art and Music History** 4

Prerequisite: Reading Level 5 and Writing Level 4
An introduction to the masterpieces of art and music from preliterary times to the 20th century. Audio and visual material will be used to illustrate artistic and musical contributions of Europe and America to the development of Western culture. (F, Sp, Su)

HUMS 140 Art of Being Human 4

Prerequisite: Reading Level 5 and Writing Level 6
Through an interdisciplinary exploration of art, dance, history, literature, music, philosophy, religion, and theater, students will analyze human experience and examine their values. An active learning environment using team-teaching will encourage self-discovery and understanding of the issues and concerns found in the Humanities and Performing Arts. (F)

HUMS 160 Mythology	4
Prerequisite: Reading Level 5	
Classical Greek and Roman myths constitute the first half of the course with the remainder chosen from at least two of the following areas: African, American, Far Eastern, Medieval European, Near Eastern, or Norse. Reading and analysis of primary sources in translation and their cross-cultural comparison are emphasized. (F, Sp, Su)	
HUMS 211 History of Art I	4
Prerequisite: WRIT 121 2.0 minimum or WRIT 131 2.0 minimum or (Reading Level 5 and Writing Level 6)	
Surveys the history of painting, sculpture, and architecture of world civilizations in Africa, the Americas, Asia and Europe from preliterate times to the 15th century. Emphasizes analysis and comparison of artistic concepts, styles and techniques; and investigates how the arts reflect ideas, issues, and values of society and the individual. (F, Sp, Su)	
HUMS 212 History of Art II	4
Prerequisite: WRIT 121 2.0 minimum or WRIT 131 2.0 minimum or (Reading Level 5 and Writing Level 6)	
Surveys the history of painting, sculpture, and architecture of world civilizations in Africa, the Americas, Asia, and Europe from the 15th to the 20th century. Emphasizes analysis and comparison of artistic concepts, styles and techniques; and investigates how the arts reflect ideas, issues, and values of society and the individual. (F, Sp)	
HUMS 213 World Civilizations I	4
Prerequisite: WRIT 121 2.0 minimum or WRIT 131 2.0 minimum or (Reading Level 5 and Writing Level 6)	
Surveys the literature and art, science and technology, and the social and political systems of major civilizations in Africa, Asia, Europe, and the Americas to approximately the 17th century. Emphasizes the contributions of early civilizations to the creativity, richness, and diversity of the human condition. (F, Sp, Su)	
HUMS 214 World Civilizations II	4
Prerequisite: WRIT 121 2.0 minimum or WRIT 131 2.0 minimum or (Reading Level 5 and Writing Level 6)	
Surveys the literature and art, science and technology, and the social and political systems of major civilizations in Africa, Asia, Europe, and the Americas from approximately the 17th century to the present. Emphasizes the contributions of modern civilizations to the creativity, richness, and diversity of the human condition. (F, Sp, Su)	
HUMS 215 American Civilization	4
Prerequisite: WRIT 121 2.0 minimum or WRIT 131 2.0 minimum or (Reading Level 5 and Writing Level 6)	
This course will explore the cultural foundations of the United States from the period of exploration to the present. This is an interdisciplinary course which examines central themes of American culture and their representation in history, literature, art, philosophy, and religion. (Su)	
HUMS 225 Grt Lake Native Amer:Hist&Trad	4
Prerequisite: None	
Surveys the Great Lakes Native American culture and people, the differences in oral tradition and written histories of the Great Lakes Anishnaabek (First People), the Talking Circle for community problem solving, and an introduction to the language. (F, Sp, Su)	
HUMS 260 Seminar: Ancient Egypt	4
Prerequisite: WRIT 121 2.0 minimum or WRIT 131 2.0 minimum or (Reading Level 5 and Writing Level 6)	
This course explores the achievements of one of the earliest and most successful of world civilizations. Developments in Egyptian art, architecture, and literature will be emphasized and the roles of religion, kingship, and geography will be studied. Great discoveries and discoverers of Egyptian archaeology will also be featured. (F)	
HUMS 265 Sem:Ethical Issues in Medicine	3
Prerequisite: None	
This course will present some of the ethical dilemmas which arise in relation to health care and develop a framework for ethical decision-making with which to deal with these and other related problems. It is designed for both health care professionals and others who are interested in these issues. (F, Su)	

HUMS 295 Indep. Study in Humanities	1-4
Prerequisite: Department Approval	
An opportunity for self-directed learners to explore topics related to, but not taught in the curriculum. Students spend at least two hours per week for each credit. A detailed proposal must be submitted by the student for approval by the Department and supervising instructor prior to registration. (F, Sp, Su)	

HUSE - Human Services

HUSE 100 Introduction to Human Services	3
Prerequisite: Reading Level 3 and Writing Level 4	
This course presents an overview of the basic programs and social institutions which provide human services. It provides the student with an orientation to and overview of methods and problem-solving skills used by human service workers in a variety of settings. (F, Sp, Su)	
HUSE 101 Personal Dimensions/Human Serv	2
Prerequisite: None	
This course explores the nature and development of personal dimensions of human services, including knowledge, values, and skills needed by people who are preparing for careers in the helping professions. The potential impact and influence of these skills on the helping process are also explored. (F, Sp)	
HUSE 110 Intro/Child Abuse and Neglect	3
Prerequisite: None	
This course reviews the history and scope of child abuse and neglect, including socioeconomic and psychological factors. It explores the world of abnormal rearing, roles of community agencies and disciplines, approaches to treatment and prevention, coordination of cases and services, and legal aspects and the law. (F, Sp)	
HUSE 112 Intro/Addctn/Substance Abuse	3
Prerequisite: None	
This course reviews substance abuse and use from a historical, sociological, and psychological perspective. It includes drug classifications, street terminology, causes of abuse, and also examines present and past legislation regarding substance abuse and use. (F, Sp, Su)	
HUSE 120 Introduction/Family Violence	2
Prerequisite: None	
This course provides an overview of the historical, socioeconomic, cultural, and psychological factors associated with family violence emphasizing battered women. The resources available, intervention techniques, the role of law enforcement agencies, legislative bodies, and social service agencies are discussed. (F)	
HUSE 240 Substance Abuse: Spec Pop/Adol	3
Prerequisite: HUSE 112 2.5 minimum or Concurrently	
This course surveys substance abuse in various populations including adolescents, older adults, women, individuals with physical or psychological disabilities or challenges, as well as various ethnic groups including African Americans, Native Americans, and Hispanics. Commonalities and areas of uniqueness for each is examined. Reasons for abuse, dependency dynamics, and treatment considerations are explored. (Sp)	
HUSE 241 Substance Abuse Prevention	3
Prerequisite: HUSE 112 2.5 minimum	
This course provides a developmental framework for a better understanding of the factors contributing to substance abuse prevention. It facilitates students' abilities to critique existing programs, identify current community needs, and address the growing demand for consultation and assistance in the field of substance abuse prevention. (F)	
HUSE 242 Chemically Dependent Family	3
Prerequisite: None	
Recommended: HUSE 112	
This course covers a conceptual framework within which to understand, assess, and effectively intervene/interact in a counseling fashion with the chemically dependent family. Specific subgroups and issues within or resulting from the chemically dependent family are explored. (Sp)	
HUSE 244 Sub Abuse:Treatment, Intrv	3
Prerequisite: HUSE 112 2.5 minimum	
This course covers the addiction cycle of alcoholics and drug abusers, personality and interactional patterns of addiction, and casework and group work techniques. It provides an analysis of current models of treatment within programs, including review of inpatient, outpatient, halfway houses, and occupational programs. (F)	

HUSE 282 Human Services Practicum I 4	HVAC 120 Heating I 4
Prerequisite: SOWK 203 2.5 minimum and (WRIT 121 2.0 minimum or WRIT 131 2.0 minimum) and Department Approval	Prerequisite: HVAC 100 1.5 minimum and HVAC 110 1.5 minimum
Recommended: HUSE 101 and (SOCL 254 or SOCL 260) and Human Services Experience	Basic construction and function of components in residential gas and oil fired furnaces with detail on theory, application, troubleshooting and servicing standard heating systems. Installation procedures and codes are also covered. Additional equipment studied will include humidifiers, air cleaners and vent dampers. (F, Sp)
This course combines classroom training with beginning field experience (10 hours per week) in a community-based human services agency. Emphasis is on knowledge of the community power structure, funding bases, and the internal working of human services organizations. Opportunities in the labor force, certification requirements, and networking are explored. (F)	HVAC 130 Air Conditioning I 4
HUSE 284 Human Services Practicum II 4	Prerequisite: HVAC 100 1.5 minimum and HVAC 110 1.5 minimum
Prerequisite: HUSE 282 2.5 minimum	Fundamentals and principles of residential air conditioning systems. Students will learn soldering and brazing of tubing, wiring, component testing, evacuation procedures, charging and maintenance of both split systems, as well as small packaged units. (F, Sp)
This course provides classroom training on principles of human services delivery with advanced practical experience (10 hours per week) in a community-based human services agency. Emphasis is on identifying systems and resources to link the systems with the people and how to mobilize the systems and the people. (Sp)	HVAC 201 Mechanical Code 4
HUSE 286 Substance Abuse Practicum I 4	Prerequisite: HVAC 120 1.5 minimum and HVAC 130 1.5 minimum
Prerequisite: SOWK 203 2.5 minimum and (WRIT 121 2.0 minimum or WRIT 131 2.0 minimum) and Department Approval	A fundamental course designed to acquaint the student with the methods and techniques used in field inspection of mechanical systems. Both the Uniform Mechanical Code and the Building Officials and Code Administrators (BOCA) Code will be discussed. (F, Sp)
Recommended: HUSE 101 and HUSE 240 and HUSE 241 and HUSE 244	HVAC 211 Schematics 3
This course combines classroom training with beginning field placement (10 hours per week) at a community agency specializing in substance abuse. Content focuses on the community power structure, funding bases, and the internal workings of substance abuse agencies. It explores opportunities in the labor force, certification requirements, and networking. (F)	Prerequisite: HVAC 100 1.5 minimum and HVAC 110 1.5 minimum
HUSE 288 Substance Abuse Practicum II 4	An in-depth study into the cause and effect aspects of schematic diagrams. The student will learn to simplify complicated schematics to obtain the sequence of operation necessary for the proper troubleshooting of heating, ventilation and air conditioning equipment. (F, Sp)
Prerequisite: HUSE 286 2.5 minimum	HVAC 220 Heating II 4
This course combines advanced field placement (10 hours per week) at a community agency specializing in substance abuse, with classroom instruction in concepts related to service delivery. Students identify systems and resources to link the systems with the people receiving services and learn how to mobilize the systems and the people. (Sp)	Prerequisite: HVAC 111 1.5 minimum and HVAC 120 1.5 minimum and HVAC 211 1.5 minimum
HUSE 297 Human Services Indepen Study 1-3	Fundamentals and principles of electronic ignition systems including troubleshooting and servicing. The major emphasis is placed on high efficiency and condensing furnaces to include sequence of operation, troubleshooting, servicing and proper installation. (F, Sp)
Prerequisite: Department Approval	HVAC 221 Introduction to Hydronics 3
This course includes special research, directed study, or service-learning projects in human services areas, such as gerontology, social work, substance abuse, or related areas. It requires at least 32 hours of laboratory work or 64 hours of field-work per credit. A learning contract is required. (F, Sp, Su)	Prerequisite: HVAC 220 1.5 minimum
HVAC - Heating, Ventilation and Air Conditioning	Covers hot water and steam residential heating systems, piping and all accessories, safety controls, expansion tanks, zone valves, installation procedures and codes. Students perform testing, troubleshooting, adjusting and servicing of components to insure maximum efficiency. (F, Sp)
HVAC 100 Fundamentals of HVAC 3	HVAC 230 Air Conditioning II 4
Prerequisite: None	Prerequisite: HVAC 111 1.5 minimum and HVAC 130 1.5 minimum and HVAC 211 1.5 minimum
This course is an introduction to the mechanical refrigeration cycle and its individual components. Compressors, evaporators, condensers and metering devices as well as their functions are covered in detail. Exercises in psychrometrics and an introduction to system design are also covered. (F, Sp, Su)	Advanced air conditioning, light commercial equipment, water cooled units, cooling towers and wiring both control and line voltage circuitry. The latest in test equipment and meters will aid the student in becoming proficient in servicing and maintenance of commercial equipment. (F, Sp)
HVAC 105 Sheet Metal Fabrication/Instal 2	HVAC 231 Heat Pump 3
Prerequisite: None	Prerequisite: HVAC 230 1.5 minimum
Designed to aid the installer in the skills and techniques for installation of residential heating and cooling systems. Topics include sheet metal layout, identification of sheet metal fittings and general furnace installation procedures. (F, Sp, Su)	This course deals entirely with heat pumps (air-to-air, water-to-air) and their installation, servicing, proper application of heat pump components and extensive wiring schematics. (F)
HVAC 110 Applied Electricity I 2	HVAC 240 Refrigeration I 4
Prerequisite: None	Prerequisite: HVAC 230 1.5 minimum or Concurrently
An introduction to basic electricity (AC and DC) using both theory and applied study methods. Topics will include electrical components, symbols, basic schematic diagrams, Ohm's Law applied to series and parallel circuits and motor types and usages. In conjunction with lab exercises, meters and their proper usage will be covered. (F, Sp, Su)	Domestic refrigeration as applied to refrigerators, freezers and de-humidifiers. Course content includes applications, operation and servicing of sealed systems, electrical and cabinet styles. (F)
HVAC 111 Applied Electricity II 2	HVAC 241 Refrigeration II 4
Prerequisite: HVAC 100 1.5 minimum and HVAC 110 1.5 minimum	Prerequisite: HVAC 240 1.5 minimum
The study of motors with an emphasis on theory, troubleshooting and servicing. Motor controls, control circuits, protection devices and discussion of energy conservation as related to motors will be covered in detail. (F, Sp)	Light commercial refrigeration to include low and medium temperature applications, as applied to ice machines, walk-ins, reach-ins and display cases. (Sp)
	HVAC 250 Pneumatic Control 3
	Prerequisite: HVAC 230 1.5 minimum
	Basic concepts of pneumatic controls and their calibration will be covered. Procedures taught will be based on industry standards for HVAC equipment in commercial structures. (Sp)

HVAC 251 Fund of Direct Digital Control	2
Prerequisite: HVAC 250 1.5 minimum	
Basic fundamentals and principles of direct digital controls will be covered through demonstrations of computer basics, control strategies for computer-based energy management systems, and installation components according to industry standards. (F)	
IDMS - Diagnostic Medical Sonography	
IDMS 201 General Sonography I: Abdomen	4
Prerequisite: Admission to Diagnostic Medical Sonography Program	
Co-requisite Courses: IDMS 202 and IDMS 234 and IDMS 280	
Provides the student with cross-sectional anatomy and pathology as it relates to sonographic scanning of the abdomen, vascular system, thyroid, prostate, scrotum, breast, and neurology of the neonate. (F)	
IDMS 202 OB/GYN Sonography I	4
Prerequisite: Admission to Diagnostic Medical Sonography Program	
Co-requisite Courses: IDMS 201 and IDMS 234 and IDMS 280	
Provides the student with cross-sectional anatomy and pathology as it relates to gynecological and obstetrical sonography. Fetal cardiac anatomy and appearance will be presented. (F)	
IDMS 234 Sonographic Physics	2
Prerequisite: Admission to Diagnostic Medical Sonography Program	
Co-requisite Courses: IDMS 201 and IDMS 202 and IDMS 280	
The student will study the fundamental principles of acoustical physics, how sound is produced and manipulated, and how it reacts in various mediums. (F)	
IDMS 245 Sonographic Instrumentation	2
Prerequisite: IDMS 234 2.5 minimum	
Co-requisite Courses: IDMS 265 and IDMS 266 and IDMS 281	
The student will be introduced to the mechanics of A-Mode, M-Mode, Doppler, and Real-time equipment. Accessory equipment such as the camera, transducer, and cathode ray tube will be presented. Methods of quality assurance will also be presented. (Sp)	
IDMS 265 General Sonography II	4
Prerequisite: IDMS 201 2.5 minimum	
Co-requisite Courses: IDMS 245 and IDMS 266 and IDMS 281	
The student will be presented with the identification of and interpretation of anatomy and pathology on sonographic exams as it relates to the abdomen, vascular system, and small parts. (Sp)	
IDMS 266 OB/GYN Sonography II	3
Prerequisite: IDMS 202 2.5 minimum	
Co-requisite Courses: IDMS 245 and IDMS 265 and IDMS 281	
The student will be presented with the identification of and interpretation of anatomy and pathology on sonographic exams as it relates to the obstetric and gynecologic patient. (Sp)	
IDMS 280 Clinical Experience I	7
Prerequisite: Admission to Diagnostic Medical Sonography Program	
Co-requisite Courses: IDMS 201 and IDMS 202 and IDMS 234	
First course in a four-semester sequence of clinical application in diagnostic medical sonography. Clinical experience is provided under the direct supervision of an ARDMS Registered Sonographer. Clinical competencies will be given corresponding to completed didactic work. Performance standards are used to evaluate the student's progress. (F)	
IDMS 281 Clinical Experience II	7
Prerequisite: IDMS 280 2.5 minimum	
Co-requisite Courses: IDMS 245 and IDMS 265 and IDMS 266	
Building on material presented in IDMS 280, this is the second course in a four-semester sequence in diagnostic medical sonography. Clinical experience is provided under the direct supervision of an ARDMS Registered Sonographer. Clinical competencies will be given corresponding to completed didactic work. Performance standards are used to evaluate the student's progress. (Sp)	

IDMS 282 Clinical Experience III	11
Prerequisite: IDMS 234 2.5 minimum and IDMS 265 2.5 minimum and IDMS 266 2.5 minimum	
Based on material presented in IDMS 281, this is the third course in a four-semester sequence of clinical application in diagnostic medical sonography. Clinical experience is provided under the direct supervision of an ARDMS Registered Sonographer. Clinical competencies will be given corresponding to completed didactic work. Performance standards are used to evaluate the student's progress. (Su)	

IMAG - Photography Technology

IMAG 101 Basic Photog for Non-Majors	2
Prerequisite: None	
Students will learn to use camera controls, exposure controls, photographic composition, and lighting to make better photographs. Color film and commercial processing will be used. Designed for students with little or no previous still photography experience who do not plan to major in imaging technology. (F, Sp, Su)	
IMAG 111 Intro to Photographic Tech I	4
Prerequisite: Reading Level 3 and Writing Level 2 and Math Level 3	
Introduces students to photographic technology on both a theoretical and practical level. The student will learn camera types and related equipment, exposure controls, beginning and intermediate black-and-white film processing and printing, including contrast controls. This course is the first of a two-course sequence for imaging technology majors. (F, Sp, Su)	
IMAG 112 Design for Imaging Tech	3
Prerequisite: (IMAG 101 2.0 minimum or IMAG 111 2.0 minimum) or Concurrently	
This course introduces students to design theory and its application to imaging technologies on both a practical and theoretical level. Students will learn and apply design elements and principles to their evolving work. (F, Sp)	
IMAG 113 Lighting Concepts/Applications	3
Prerequisite: (IMAG 101 2.0 minimum or IMAG 111 2.0 minimum) or Concurrently	
Introduces the student to fundamental lighting concepts encountered in the studio and on location. Students will learn to apply their knowledge by identifying and solving common photographic lighting problems. Students will use professional continuous and electronic flash equipment to produce acceptable images. (F, Sp)	
IMAG 114 Intro Photographic Color Tech	3
Prerequisite: IMAG 111 2.0 minimum and IMAG 112 2.0 minimum and IMAG 113 2.0 minimum and Reading Level 5 and Writing Level 2 and Math Level 3	
Introduces the student to the theories and applications of contemporary color photographic materials and processes. Students will learn to produce acceptable color images by applying the concepts of film selection, film testing, color temperature, lighting, and color image design to their evolving work. (F, Sp)	
IMAG 117 Intro to Photographic Tech II	4
Prerequisite: IMAG 111 2.0 minimum	
Continuation of IMAG 111. Students will learn intermediate and advanced black-and-white exposure, developing, and printing controls and techniques. Students will acquire knowledge and skills to solve technical, aesthetic, and communication problems. Successful completion required for continuation in the Imaging Technology Program (Still Track) at the 200 level. (F, Sp)	
IMAG 119 Intermediate Lighting	4
Prerequisite: IMAG 113 2.0 minimum or FILM 118 2.0 minimum (previously IMAG 118)	
An exploration of intermediate lighting theories, practices and techniques. This course emphasizes the use of natural light and electronic flash as applied to people, locations and advanced studio settings. (F, Sp)	
IMAG 191 Photo Imaging Special Topics	1
Prerequisite: IMAG 117 2.0 minimum	
Recommended: IMAG 114 and IMAG 119	
Photo Imaging Special Topics will be offered for intermediate and advanced photographic imaging students. Topics will cover a broad range of subjects related to photographic imaging and related fields. (F, Sp, Su)	

IMAG 192 Photo Imaging Special Topics 2	IMAG 229 Advanced Imaging Applications 1
Prerequisite: IMAG 117 2.0 minimum Recommended: IMAG 114 and IMAG 119 Photo Imaging Special Topics will be offered for intermediate and advanced photographic imaging students. Topics will cover a broad range of subjects related to photographic imaging and related fields. (F, Sp, Su)	Prerequisite: IMAG 117 2.0 minimum or (FILM 226 2.0 minimum and FILM 227 2.0 minimum (previously IMAG 226 and IMAG 227)) and Approved Proposal Allows advanced students to work on improving skills or to enhance skills in an area of strength or interest. Students will work with an instructor in a directed learning experience. Acceptable written proposal required prior to registration. (F, Sp, Su)
IMAG 193 Photo Imaging Special Topics 3	IMAG 232 Internship 3
Prerequisite: IMAG 117 2.0 minimum Recommended: IMAG 114 and IMAG 119 Photo Imaging Special Topics will be offered for intermediate and advanced photographic imaging students. Topics will cover a broad range of subjects related to photographic imaging and related fields. (F, Sp, Su)	Prerequisite: IMAG 117 2.0 minimum or (FILM 226 2.0 minimum and FILM 227 2.0 minimum (previously IMAG 226 and IMAG 227)) and Department Approval Allows advanced students to work as an intern developing competencies in the technical, business, creative, and communicative aspects of photography, film making, or electronic imaging. Acceptable written application and internship agreement required prior to registration. (F, Sp, Su)
IMAG 210 Intermediate Color Ap and Tech 3	IMAG 233 The Business of Photography 2
Prerequisite: IMAG 114 2.0 minimum and IMAG 117 2.0 minimum and IMAG 119 2.0 minimum Introduces the student to the contemporary materials and processes of the negative to positive color photographic print process. Students will learn to produce professionally acceptable prints from a wide variety of color negatives by applying color balancing and printing controls, print finishing techniques, and lab efficiency skills to their work. (F)	Prerequisite: ((IMAG 212 2.0 minimum and IMAG 213 2.0 minimum) or IMAG 220 2.0 minimum) and (IMAG 214 2.0 minimum or IMAG 221 2.0 minimum) and IMAG 211 2.0 minimum or Concurrently Exposes the student to the general business practices and approaches used in the photographic marketplace. (Sp)
IMAG 211 Advanced Color Appl and Tech 4	IMAG 234 Portfolio Assembly/Degree Comp 3
Prerequisite: IMAG 210 2.0 minimum A continuation of IMAG 210 that involves the advanced student with color as a critical communication tool. Students, individually and as team members, will learn to produce highly effective and professionally acceptable photographs with color transparency film. A high level of technical accomplishment and aesthetic development will be reached. (Sp)	Prerequisite: ((IMAG 212 2.0 minimum and IMAG 213 2.0 minimum) or IMAG 220 2.0 minimum) and (IMAG 214 2.0 minimum or IMAG 221 2.0 minimum) and IMAG 211 2.0 minimum or Concurrently Concluding course for photo program associate degree. Finalizes the student's portfolio and immediate career plans. Students edit and assemble their best work into a cohesive, visual resume in order to secure employment or gain admission to another institution for continued studies. Students present portfolios in a public program. (Sp)
IMAG 212 Large Format Photography 2	IMAG 238 Project Lab Independent Study 3
Prerequisite: IMAG 114 2.0 minimum and IMAG 117 2.0 minimum and IMAG 119 2.0 minimum and (IMAG 210 2.0 minimum or Concurrently) Introduces students to large format and medium format imaging technologies and their applications to commercial illustration. Students will work in areas directly linked to the technical elements of this format. (F)	Prerequisite: IMAG 117 2.0 minimum or (FILM 226 2.0 minimum and FILM 227 2.0 minimum (previously IMAG 226 and IMAG 227)) and Approved Proposal Allows advanced students to pursue study in areas not formally taught within the curriculum when these studies require the use of the Photography Center facility. Students will work in consultation with an instructor. Acceptable written proposal required prior to registration. (F, Sp, Su)
IMAG 213 Portrait Photography 2	IMAG 240 Internship 4
Prerequisite: IMAG 114 2.0 minimum and IMAG 117 2.0 minimum and IMAG 119 2.0 minimum and (IMAG 210 2.0 minimum or Concurrently) Introduces students to medium format imaging technologies and their applications to portrait photography. Students will work in areas directly linked to the technical and expressive elements of these formats. (F)	Prerequisite: IMAG 117 2.0 minimum or (FILM 226 2.0 minimum and FILM 227 2.0 minimum (previously IMAG 226 and IMAG 227)) and Department Approval Allows advanced students to work as interns developing competencies in the technical, business, creative, and communicative aspects of photography, film making, or electronic imaging. Acceptable written application and internship agreement required prior to registration. (F, Sp, Su)
IMAG 214 Photojournalism 2	
Prerequisite: IMAG 114 2.0 minimum and IMAG 117 2.0 minimum and IMAG 119 2.0 minimum and (IMAG 210 2.0 minimum or Concurrently) Introduces students to techniques and practices of photojournalism, documentary photography, and public relations photography. (F)	
IMAG 215 Photo Imaging Technology 2	
Prerequisite: ARTS 171 2.0 minimum and (IMAG 212 2.0 minimum and IMAG 213 2.0 minimum (previously IMAG 220) and IMAG 214 2.0 minimum and (IMAG 211 2.0 minimum or Concurrently (previously IMAG 223)) Historical and contemporary photographic styles that reflect the program's areas of emphasis will be examined. Students will apply critical thinking processes and current photographic imaging technologies to produce a body of work illustrating their areas of special interest. (Sp)	
IMAG 228 Independent Study 3	
Prerequisite: IMAG 117 2.0 minimum or (FILM 226 2.0 minimum and FILM 227 2.0 minimum (previously IMAG 226 and IMAG 227)) and Approved Proposal Allows advanced students to pursue study in areas not formally taught within the curriculum. Students will work in consultation with an instructor. Acceptable written proposal required prior to registration. (F, Sp, Su)	
	INSU - Insurance
	INSU 265 Principles Risk and Insurance 3
	Prerequisite: None At the completion of this course, the student will have a working knowledge of the theory of risk, insurance terminology, legal insurance contracts, and use of risk management. (Sp)
	INTR - Interior Design
	INTR 100 Interior Design Fundamentals 3
	Prerequisite: Reading Level 3 and Writing Level 2 Practical survey course for residential interior design and decoration. Topics include planning, selecting and arrangement of furnishings, scheduling color schemes, and identification of furniture styles as they relate to the selection and coordination of home furnishings and accessories. (F, Sp, Su)

<p>INTR 110 Applied Design/Color Theory 3 Prerequisite: None Recommended: Reading Level 3 and Writing Level 2 A studio course in basic design theory. Topics include two- and three-dimensional design fundamentals, elements and principles of design, color, creativity and problem solving as they relate to interior design. (F, Sp)</p> <p>INTR 151 Computer-Aided Kitchen Design 4 Prerequisite: None Recommended: INTR 106 or ARCH 100 and Windows or Keyboarding This course is an in-depth study of kitchen planning, design, and remodeling through computer software applications. Lecture/Lab. (F, Sp, Su)</p> <p>INTR 170 Interior Design Principles 4 Prerequisite: Reading Level 5 and Writing Level 4 This course is an overview of the basic knowledge required for the education of the professional interior designer. Human needs are the focal point of solving problems of space planning and furniture arrangement. Students will use the elements and principles of design to evaluate function and aesthetics of interior spaces. (F, Sp)</p> <p>INTR 185 Introduction to Textiles 3 Prerequisite: Reading Level 5 and Writing Level 4 This course examines the basic fundamentals of textiles characteristics and identification; fibers, yarns, fabric construction, finishes and regulations, with emphasis on applications, performance and care in the apparel, interiors and auto industry. (Sp)</p> <p>INTR 190 Interior/Materials/Equipment 4 Prerequisite: None Recommended: INTR 106 or ARCH 100 or Equivalent Study of nonstructural interior finishes and materials, their methods of application and installation and their effect on the environment. Students will study kitchens, bathrooms, cabinets, ceilings, walls, floors, and paint. (F, Sp)</p> <p>INTR 201 Cultural Diversity In Housing 3 Prerequisite: Reading Level 5 and Writing Level 6 This multidisciplinary course is the study of how culturally diverse ideas, issues, values, and institutions in global societies have shaped the built environment and the political, social and economic impact this has on the individual and the group. (Sp)</p> <p>INTR 230 World Decorative Arts 3 Prerequisite: None Recommended: Reading Level 5 and Writing Level 4 This course is a survey of the decorative arts of the world including furniture, interior architecture, textiles, and accessories. Students will study designers, styles, materials and techniques and their influence upon the political, geographical, economic and religious cultures of Africa, Asia, Europe and the Americas. Period is from antiquity to seventeenth century. (Sp)</p> <p>INTR 231 Period Interiors 3 Prerequisite: None Recommended: Reading Level 5 and Writing Level 4 This course is a study of the decorative art periods including furniture, interior architecture, textiles, and accessories from the Italian Renaissance to the nineteenth century western industrial revolution. (Sp)</p> <p>INTR 232 Twentieth Century Interiors 3 Prerequisite: None Recommended: Reading Level 5 and Writing Level 4 This course is a selective survey of interior design covering the history and philosophy of modern and international styles from the turn of the century to the 1990s. (F, Sp)</p> <p>INTR 256 Interior Professional Practice 3 Prerequisite: None Recommended: Second Year Interior Design Students This course is an in-depth study of the business and professional practices of interior designers. Students prepare written communications, contract forms, and schedules. The study of marketing, ethics, and project management are included. (F)</p>	<p>INTR 261 Interiors Project Laboratory 1-4 Prerequisite: Department Approval Restriction: Interior Design Majors This course is a directed study of special projects not incorporated in regular course offerings. (F, Sp, Su)</p> <p>INTR 263 Interior Design Internship 1 Prerequisite: Department Approval Restriction: Interior Design Majors Recommended: INTR 256 2.0 minimum and GPA 2.5 and 20 credits completed in INTR This course is a work site experience. Students will gain pre-career experience by working in a studio environment under the supervision of a professional interior designer or architect. Regularly scheduled progress reports will be given and discussed with supervising faculty member. (F, Sp, Su)</p> <p>INTR 265 Interior Design Studio I 8 Prerequisite: ARCH 101 2.0 minimum and ARCH 121 2.0 minimum and INTR 151 2.0 minimum and INTR 170 2.0 minimum and INTR 190 2.0 minimum An integrated design studio with components of interior space planning, interior lighting and construction systems, and residential interior design with computer applications. Students will apply knowledge, skills processes and theories of interior design to residential studio problems. Residential interior design includes programming, universal design, human factors data and specifying interior materials for a sustainable environment. (F)</p> <p>INTR 270 Interior Design Portfolio 2 Prerequisite: None Restriction: Interior Design Majors Recommended: ARCH 121 and 20 credits completed in INTR The portfolio course is an opportunity for students to organize photographs, matte/frame, and display their visual works. At the completion of the course, the students will have developed a format for a portfolio. (Sp)</p> <p>INTR 275 Interior Design Studio II 8 Prerequisite: ARCH 101 2.0 minimum and ARCH 121 2.0 minimum and INTR 151 2.0 minimum and INTR 170 2.0 minimum and INTR 190 2.0 minimum An integrated design studio with components of three dimensional visualization, commercial specifications and commercial interior design using computer applications. Students will apply knowledge, skills, processes, and theories of interior design to commercial studio problems. Commercial interior design includes programming, schematic design, design development, and contract documents. (Sp)</p>
IRXT - Radiologic Technology	
<p>IRXT 100 Introduction to Imaging 4 Prerequisite: Admission to Radiologic Technology Program Survey of the role of the radiographer in the health care industry. Explores the historical perspective of x-ray, certification, licensure, and continuing education requirements. Covers principles of basic patient care including: aseptic techniques, infection control, vital signs, medical emergencies, venipuncture, intravenous medication administration, and other practices emphasizing the physical and emotional aspects of basic patient care. A clinical rotation at a college affiliate site and laboratory activities are included. (F)</p> <p>IRXT 111 Radiographic Positioning I 5 Prerequisite: Admission to Radiologic Technology Program Student radiographers are introduced to radiographic positioning of the upper and lower extremity, chest, abdomen, bony thorax, pelvis, and spine. Associated topographic, skeletal, chest, and abdominal anatomy is studied. A laboratory experience is provided to evaluate the student skills in performing each position/projection. (F)</p> <p>IRXT 112 Radiographic Positioning II 4 Prerequisite: IRXT 111 2.5 minimum A continued study of routine radiographic positioning with the addition of fluoroscopic procedures. Included are studies of the skull, G.I. tract, G.U. tract, myelography, and bronchography. In addition, various contrast media are studied. Laboratory experiences are provided to evaluate student skills in performing selected position/projections. (Sp)</p>	

IRXT 113 Additional RAD Procedures	1	IRXT 213 Clinical Practice II	5
Prerequisite: IRXT 112 2.5 minimum Special radiologic procedures are studied and some related imaging modalities surveyed. Procedures include neurologic, cardiovascular, arthrographic, mammographic, digital imaging, and tomographic studies. (Su)		Prerequisite: IRXT 203 2.5 minimum Second course in a two-semester sequence of clinical applications in radiography. Clinical experience is provided under the direct supervision of an ARRT Registered Technologist. Clinical competencies will be given corresponding to completed didactic work. Performance standards are used to evaluate the students progress. (F, Su)	
IRXT 114 Cross-Sectional Anatomy	3	IRXT 214 Comprehensive Experience I	6
Prerequisite: IRXT 113 2.5 minimum Provides an overview of transverse, coronal, and sagittal sectional anatomy of the human body. Special emphasis is placed on a study of the head and brain, thorax, abdomen and pelvis. The shoulder, elbow, hip and knee are also examined. Correlations between cadaver cross-sections, CTs, MRIs and radiographs are explored. (Sp)		Prerequisite: IRXT 204 2.5 minimum or IRXT 213 2.5 minimum First in a three-semester sequence of clinical application in radiography. Clinical experience is provided under the direct supervision of an ARRT Registered Technologist. Clinical competencies will be given corresponding to completed didactic work. Performance standards are used to evaluate the students progress. (F)	
IRXT 121 Radiographic Exposure I	3	IRXT 215 Comprehensive Experience II	6
Prerequisite: Admission to Radiologic Technology Program The formation of the radiographic image is the focus of IRXT 121. Photographic and geometric variables are related to radiographic factors and their various interactions compared and contrasted. Finally, a study of the history of radiology, basics of radiation formation, and anatomy of the X-ray tube are discussed. (Sp)		Prerequisite: IRXT 214 2.5 minimum Second in a three-semester sequence of clinical application in radiography. Clinical experience is provided under the direct supervision of an ARRT Registered Technologist. Clinical competencies will be given corresponding to completed didactic work. Performance standards are used to evaluate the students progress. (Sp)	
IRXT 122 Radiographic Exposure II	2	IRXT 219 Imaging Update	1
Prerequisite: IRXT 121 2.5 minimum Various beam modifying devices are presented and their relation to formation of a radiographic image studied. Includes a study of manual processing and the theory of image formation. Dark room procedures, quality control, both radiographic and photographic, will also be explored. (Su)		Prerequisite: IRXT 132 2.5 minimum This course will provide the advanced imaging student with an update of positioning, exposure, and physics. In addition, the use of a comprehensive test will assess the student's level of knowledge in the imaging technology. (Su)	
IRXT 131 Radiologic Physics	3	IRXT 235 Comprehensive Experience II-S	4
Prerequisite: IRXT 122 2.5 minimum and MATH 112 2.5 minimum Basic physical principles are related to the radiologic process. A study of basic electricity and the operation of the x-ray circuit are presented. Finally, advanced topics regarding the formation of radiation, protection of the X-ray tube, and X-ray attenuation are studied. (F)		Prerequisite: IRXT 214 2.5 minimum Second in a three-semester sequence of clinical application in radiography. Clinical experience is provided under the direct supervision of an ARRT Registered Technologist. Clinical competencies will be given corresponding to completed didactic work. Performance standards are used to evaluate the students progress. (Su)	
IRXT 132 Radiobiology and Protection	2	IRXT 236 Comprehensive Experience III-S	4
Prerequisite: IRXT 131 2.5 minimum This course focuses on the rationale for good radiation hygiene and methods to protect the patient and technologist. Current theories regarding the physiological effects of radiation are explored. (Sp)		Prerequisite: IRXT 215 2.5 minimum Third in a three-semester sequence of clinical applications in radiography. Clinical experience is provided under the direct supervision of an ARRT Registered Technologist. Clinical competencies will be given corresponding to completed didactic work. Performance standards are used to evaluate the students progress. (Su)	
IRXT 200 Intro/Radiologic Pathology	2	IRXT 246 Comprehensive Experience III	6
Prerequisite: None Emphasizes how disease processes are diagnosed radiographically and the relationship of the radiographic appearance of the disease to its anatomic, physiologic, and pathologic characteristics. The etiology, treatment, and resolution of each disease is discussed with an attempt to relate more recent advances in these areas. (F)		Prerequisite: IRXT 235 2.5 minimum Third in a three-semester sequence of clinical applications in radiography. The course is programmed with specific performance activities. Credit is arranged for each individual term with a ratio of one credit hour to three clinical clock hours. The ratio for lecture is consistent with the one-to-one ratio. (F)	
IRXT 202 Clinical Practice I	5		
Prerequisite: IRXT 111 2.5 minimum First in a two-semester sequence of clinical application in radiography. The course is programmed with specific performance activities. Credit is arranged for each individual semester with a ratio of one credit hour to three clinical clock hours. The ratio for lecture is consistent with the one-to-one ratio. (Sp)			
IRXT 203 Clinical Practice I-S	3		
Prerequisite: IRXT 111 2.5 minimum First in a two-semester sequence of clinical application in radiography. The course is programmed with specific performance activities. Credit is arranged for each individual term with a ratio of one credit hour to three clinical clock hours. The ratio for lecture is consistent with the one-to-one ratio. (Sp, Su)			
IRXT 204 Clinical Practice II-S	3		
Prerequisite: IRXT 202 2.5 minimum Second course in a two-semester sequence of clinical applications in radiography. The course is programmed with specific performance activities. Credit is arranged for each individual term with a ratio of one credit hour to three clinical clock hours. The ratio for lecture is consistent with the one-to-one ratio. (Su)			
IRXT 210 Radiology Career Management	1		
Prerequisite: None Designed to acquaint the student with the organization, function, supervision, and financial arrangements relative to departments of radiology, basic X-ray equipment for performing preventive maintenance, and detecting simple functioning difficulties. (F)			

ISC1 Integrated Science

ISC1 110 Science Discovery: A Process	4
Prerequisite: Reading Level 3 and Writing Level 2 and Math Level 3 Emphasizes reducing anxiety and improving reasoning skills necessary for participation in science courses. Methods to identify and reduce anxiety associated with science topics are presented. Science reasoning skills will be inventoried, including observation, experimental techniques, critical thinking, and communication. (F, Sp)	
ISC1 121 Integrated Sci for Education I	4
Prerequisite: Reading Level 5 and Writing Level 6 and Math Level 4 The first of two general science courses focusing on the fundamental behavior of matter and energy using a historical and environmental context. Science processes, methods, and reasoning skills are emphasized throughout. Recommended for education majors. (F, Sp)	
ISC1 122 Integrate Sci for Education II	4
Prerequisite: ISC1 121 2.0 minimum and Reading Level 5 and Writing Level 6 and Math Level 4 The second of two general science courses focusing on the biological and ecological nature of our universe, using a historical and integrative approach. Science processes, methods, and reasoning skills are emphasized throughout. Recommended for education majors. (F, Sp)	

ISCI 131 Integrated Science - Physical 4**Prerequisite:** Reading Level 5 and Writing Level 4 and Math Level 4

A general education course designed to provide students with a basic understanding of the methods and applications of science. Topics include basic chemistry, thermodynamics, the hydrologic cycle, climate, and weather. Critical thinking and problem-solving skills are applied to environmental issues. Laboratory activities illustrate and amplify lecture topics. (F, Sp)

JAPN - Japanese**JAPN 115 Conversational Japanese I** 3**Prerequisite:** None

First course in conversational Japanese. Designed for people with little or no knowledge of Japanese who wish to acquire conversational skills. Students learn correct pronunciation, basic sentence structures, and practical vocabulary for everyday use and traveling. Selected features of Japanese culture and everyday life in Japan will be introduced. (F, Sp, Su)

JAPN 116 Conversational Japanese II 3**Prerequisite:** None**Recommended:** JAPN 115 or Equivalent

Second course in conversational Japanese. Designed for people with some prior knowledge of Japanese who wish to improve their conversational skills. Students learn practical vocabulary and essential grammar to converse in Japanese. Selected features of Japanese culture and everyday life in Japan will be introduced. (F, Sp)

JAPN 121 Elementary Japanese I 4**Prerequisite:** Reading Level 5

First course of a two-semester sequence in elementary Japanese. Designed to provide students with basic knowledge of Japanese for practical communication and skills in speaking, reading, writing, and listening comprehension. Provides information concerning everyday life and culture of Japan. Hiragana and Katakana syllabaries and 40 Kanji will be introduced. (F, Sp, Su)

JAPN 122 Elementary Japanese II 4**Prerequisite:** JAPN 121 1.5 minimum and Reading Level 5

Second course of a two-semester sequence in elementary Japanese. Students receive more practice in Japanese for practical communication. Develops speaking, reading, writing, and listening skills. Previously acquired knowledge and skills are refined and ability to communicate in Japanese is increased. Additional 100 Kanji will be introduced. Class is taught mostly in Japanese. (Sp)

JAPN 201 Intermediate Japanese I 4**Prerequisite:** JAPN 122 1.5 minimum and Reading Level 5

First course of a two-semester sequence in intermediate Japanese. Includes introduction of more advanced grammar, vocabulary building, composition, group discussions, and more information on Japanese culture and everyday life. Additional 150 Kanji will be introduced. (F)

JAPN 202 Intermediate Japanese II 4**Prerequisite:** JAPN 201 1.5 minimum and Reading Level 5

Continuation of Japanese 201. Includes more advanced grammar, intensive vocabulary building, writing composition, reading contemporary materials, discussions, and student presentations of Japanese language or culture. Additional 150 Kanji will be introduced. Natural and practical communication will be emphasized. Class is taught in Japanese. (Sp)

JRNL - Journalism**JRNL 151 Newswriting and Reporting** 3**Prerequisite:** None**Recommended:** Computer and/or Keyboarding Experience

Introduction to, and practice in, writing news stories. Students learn news terminology, style, objectivity, attribution, accuracy, and copy-editing skills. Basic news gathering and reporting tactics are presented and practiced. (F)

JRNL 254 Editorial Writing 3**Prerequisite:** JRNL 151 2.0 minimum or WRIT 121 2.0 minimum or WRIT 131 2.0 minimum**Recommended:** Computer and/or Keyboarding Experience

A course in how to write effective editorials. Students analyze content, structure and style of editorial models, learn methods of finding subjects, learn methods of research, and write editorials and articles on important issues. (Sp)

LABR - Labor Relations**LABR 200 Intro to Labor Relations** 3**Prerequisite:** None

This course surveys both historical and legal frameworks of the labor movement. Major labor laws, causes and goals of the labor movement, and union structure and behavior will be discussed. Students will explore both labor and management approaches to solving employment disputes. (F, Sp)

LABR 201 Labor Negotiation/Contract Adm 3**Prerequisite:** None**Recommended:** LABR 200 or LABR 203 or Related Work Experience

This course surveys key aspects of negotiating/applying collective bargaining agreements including: labor negotiations; contract administration; and grievance processing and arbitration. This hands-on course conveys basic knowledge, legal framework, and practical skills pertaining to negotiations and grievance adjudication. (F)

LABR 203 Labor Law 3**Prerequisite:** None**Recommended:** LABR 200 or Related Work Experience

An in-depth study of traditional labor law including NLRB law, court decisions, and historical origins which impact union organizing, representation elections, unfair labor practices, bargaining, strikes, and enforcement of labor contracts. (Sp)

LABR 204 Employment Law for Managers 3**Prerequisite:** None

This course provides an introduction and overview to the principles and application of laws affecting the workplace, not including traditional labor relations law. Areas of law covered include discrimination, wage-hour, unemployment benefits, personnel records, and common law issues relating to discharge and other matters. (F, Sp)

LAND - Landscape**LAND 100 Intro to Landscape Drafting** 2**Prerequisite:** None

This course covers the use of drafting equipment with an emphasis on lettering, line convention, and title blocks. The students will develop a basic format for design construction drawings. The course provides essential drafting skills for beginning the Landscape Program. (F, Sp, Su)

LAND 101 Landscape Special Topics .25**Prerequisite:** None

The Landscape Special Topics series will feature topics related to the green industries. The lectures will allow students to sample and explore a wide variety of topics related to plant materials, landscape designs and construction principles. Topics will range from water gardens and bonsais to rose gardens and herbs. (F, Sp)

LAND 103 Landscape Dsgn Workshop Series .25**Prerequisite:** None

The Landscape Design Workshop Series will feature topics related to the green industries. The workshop format allows for hands-on participation on the particular topics area. Participants can explore topics from wreath making to terrarium construction. (F, Sp)

LAND 120 Basics/Landscape Contracting 3**Prerequisite:** None

This course will explore the field of landscape contracting and its relationship to landscape architecture and management. Landscape contractors and their role in plan evaluation, landscape material selection and their installation and construction features will be fully analyzed. The role of the individual in the design/build industry will be highlighted. (F)

LAND 130 Interior Landscaping 3**Prerequisite:** None

This course includes the identification, culture, placement, and use of foliage and flowering plants in the office, mall, restaurant or home. Basic principles of landscaping are covered to include soil media, watering, light requirements, fertilizer, and insect and disease control. Management in relation to the plant's placement and use within the interior landscape is also discussed. (Sp)

- LAND 132 Residential Landscaping** 2
Prerequisite: None
This course highlights a basic design process approach for developing a home landscape. The development of a basic design focusing on your own home including placement of plant material, decks, patios, water features, and other landscape elements will be demonstrated. A course for the new homeowner, homeowner renovating his or her landscape, residential landscaper, or nursery person. (F, Sp, Su)
- LAND 133 Home Landscape Maintenance** 3
Prerequisite: None
This course will provide a basic understanding of landscape maintenance problems and solutions. Students will develop records and schedules for pest control as well as tree, shrub, lawn, and flower maintenance. Plant selection, installation, pruning, and fertilization will be covered. (F, Sp, Su)
- LAND 140 Evergreen and Deciduous Trees** 3
Prerequisite: None
This course emphasizes identification of both common and uncommon deciduous trees, shrubs, evergreens, vines, and ground covers used in the landscape trade. Weekly lab walks facilitate development of field identification skills based on form, foliage, bark, bud, flower, and fruit characteristics. Landscape use and basic culture of individual plants are also covered. (F, Su)
- LAND 141 Flowering Trees, Shrubs, Vines** 3
Prerequisite: None
This course explores spring flowering trees, shrubs, broadleaf evergreens, and ground covers. Identification in the field is emphasized during weekly lab walks. Design characteristics of individual plants including size, habit, flowers, fruit, bark, foliage, and buds are discussed as well as basic cultural requirements. (Sp, Su)
- LAND 142 Perennial/Annual Flower Plants** 3
Prerequisite: None
This course covers the identification and basic culture of approximately 170 perennial and annual flowering and budding plants. Specific features of each plant will be discussed in relation to their proper landscape use. Herbs, grasses, and rock and water garden plants will also be highlighted. (Sp, Su)
- LAND 145 Field Exper Landscape Arch** 3
Prerequisite: None
This course will introduce the student to various aspects of the landscape architecture profession. Different aspects of the profession will be presented through discussion, videos, slides, field trips, and guest speakers. Topics will include urban planning, zoo design, ecological planning, landscape construction, recreation, and park design. (F, Sp)
- LAND 150 Principles of Landscape Arch** 3
Prerequisite: None
Students will explore the broad scale philosophical, historical, and technical aspects of landscape architecture. Basic problem-solving techniques and design theory are introduced along with implementation of the design process. (F, Sp, Su)
- LAND 152 Landscape Graphics Comm-Begin** 3
Prerequisite: LAND 150 2.0 minimum or Concurrently
This course explores basic illustration techniques relative to the field of landscape architecture. Both the formal and informal applications of mechanical and free-hand drafting communication are emphasized to include reproduction printing methods. (F, Sp)
- LAND 153 Landscape Graphics Comm-Adv** 3
Prerequisite: LAND 152 1.0 minimum
This course acquaints the student with visual presentation techniques used in landscape architecture. Plan, section, and three-dimensional graphics are explored using a range of media. The students will develop sketching and mechanical-drafting techniques for the preparation of professional graphic presentations. (Sp)
- LAND 160 Planting Design I** 3
Prerequisite: (LAND 140 1.0 minimum and LAND 150 1.0 minimum) or Concurrently
This course provides an overview of the planting design principles from site analysis to construction documents. Planting design principles are emphasized as well as practical aspects of plant selection and design implementation in a range of design situations. Contemporary issues concerning today's design and construction industries are also discussed. (F)
- LAND 161 Planting Design II** 3
Prerequisite: LAND 160 1.0 minimum
This course applies the planting design skills gained in LAND 160 to a broad range of sites and issues typically encountered in today's landscape design and construction industries. Topics covered include functional uses of plants, native plant material, and planting design in the urban environment. (Sp)
- LAND 163 Designing Ornamental Gardens** 3
Prerequisite: LAND 141 1.0 minimum or Concurrently
This course is a practical approach to designing the herbaceous garden. Annuals, perennials, herbs, and ornamental grasses are analyzed to create a design that will be in harmony with its environment. Color, height, texture, form, and fragrance are some of the plant's characteristics which will be discussed. (F, Sp)
- LAND 164 Site Design** 3
Prerequisite: LAND 150 2.0 minimum
This course emphasizes use of the design process to solve a variety of urban and non-urban site planning problems. Project design solutions require graphic delineation stressing plan view presentations. A variety of drawing scales, graphic materials, and techniques will be explored. (F)
- LAND 170 Site Grading I** 3
Prerequisite: LAND 150 2.0 minimum
This course covers basic through advanced principles, methods, and procedures for grading a site. Use of contour lines, land form interpretation, and earthwork computation are studied and applied to problem solving for both typical and special requirement sites. (F)
- LAND 171 Site Grading II** 3
Prerequisite: LAND 170 2.0 minimum
This is an advanced site-grading course that builds on the skills gained in LAND 170. This Michigan Soil Erosion Control Act is emphasized with respect to the requirements related to circulation systems and recreational and utility facilities. (Sp)
- LAND 172 Site Layout** 3
Prerequisite: LAND 171 2.0 minimum or Concurrently
This course covers plan dimensioning and layout techniques for vehicle and pedestrian circulation systems, building locations, utilities, and sporting and recreational facilities. Professional graphic techniques are emphasized. (Sp)
- LAND 180 Landscape Ecology** 3
Prerequisite: None
This course is for the professional as well as the interested individual covering the relatively new field of landscape environments. Develop a basic understanding of landscape communities, how they developed, and how they function. Plant communities, native species, natural design, and environmental impact are some of the topics covered. (F)
- LAND 181 Landscape Restoration/Manage** 3
Prerequisite: None
Recommended: LAND 180
This course will cover the detailed steps necessary to complete a total restoration of a damaged ecosystem. Specific system designs dealing with wetlands and prairies in particular will be highlighted. Specific native plants, animals, and insects will be discussed. Field experiences and native plant identification are a critical part of this course. (Sp)
- LAND 182 Wetland Delineation/Evaluation** 2
Prerequisite: None
This course will explore the basic elements of wetland identification. Wetland indicator vegetation, hydric soils, and wetland hydrology will be covered. The U.S. Army Corps of Engineers Wetland Delineation Manual will be used as the guideline for this class. Certification credits can be secured by taking this course. (Sp)
- LAND 183 Planned Wetlands Eval/Restorat** 2
Prerequisite: None
This course will discuss goals which are desirable for designing planned wetlands, constructed, restored or enhanced with specific targeted functions in mind. The class will focus on assessment of wetland functions during the design process and tools available to accomplish this. Wetland design, restoration, evaluation, and management will also be discussed. (Sp)

LAND 220 Wetland Restoration .5
Prerequisite: None
 This course will present current information available from the MDNR, EPA, and Army Corp of Engineers as it relates to wetland regulations and policy. Wetland delineation, mitigation, design, construction, and planting will be highlighted. Restoration enhancement and creation of wetlands will be outlined and developed. (F)

LAND 222 Landscape Construct Tech Begin 3
Prerequisite: None
 This course will deal with the basic concepts needed to operate as a landscape contractor in the design/build industry. The fundamentals of landscape design evaluation, development of materials lists, and cost takeoffs will be demonstrated. Basic site analysis, site survey, drainage and grading techniques will be demonstrated. (F)

LAND 225 Landscape Cost Estimation 3
Prerequisite: None
 This course is an introduction to the study of landscape contracting and the cost estimating process. The class covers the project management process and the costing factors associated with it. The areas of material costs, equipment cost, labor costs, and related management charges will be evaluated. The preparation of bids and the bidding process will be highlighted. (F, Sp)

LAND 232 Professional Res. Land Design 3
Prerequisite: LAND 100 2.0 minimum
 This course is designed for the individual interested in residential and small commercial design projects on a professional scale. Several design problems will be presented and detailed projects will be developed. (F, Sp)

LAND 233 Grounds Management 3
Prerequisite: None
 The student will evaluate a landscape design and/or specific site plan with total management of the site in mind. Seasonal management such as pruning, transplanting, pesticide applications and fertilization as well as cost evaluations will be based on commercial and office sites. This course is for the professional grounds manager. (F, Sp)

LAND 242 Ecological Land Planning 3
Prerequisite: None
 This course will introduce the student to the land planning process. The ecological method of land planning will be emphasized with projects demonstrated. Field trips to planning meetings and project sites will be an integral part of this course. (Sp)

LAND 250 Landscape Construction Methods 3
Prerequisite: LAND 150 2.0 minimum
 This course examines the properties and uses of concrete, asphalt, masonry, wood, and other landscape construction materials. Basic design and installation methods of landscape structures are emphasized in addition to the introduction of professional construction drafting techniques. (F)

LAND 252 Landscape Construction Details 3
Prerequisite: LAND 250 2.0 minimum
 Focuses on graphic techniques for drawing construction details and coordination of details with site plan layout. Studies detailing utilities, irrigation systems, circulation systems, recreational facilities, and various light construction features. Design-build procedures are stressed, including material tabulation and cost estimating. (Sp)

LAND 276 Landscape Documents and Spec 2
Prerequisite: LAND 164 2.0 minimum
 This course explores the relationship and principles between specifications and working drawings. The cost of projects as well as bid preparations will be highlighted. The student will prepare bids, write specifications, and participate in a class bid opening. (F)

LAND 281 CAD Basics in Landscape Design 1
Prerequisite: None
 This basic introduction to computer-based landscape design software packages will include basic computer concepts related to landscape drafting and design principles. Hands-on computer exercises will feature landscape modules of site design and selection. (F, Sp)

LAND 282 Computer Draft/Dsgn Land Arch 3
Prerequisite: None
 This course assumes no previous computer experience. A beginning class for the individual interested in computers and what they can do for you in landscape design, maintenance, construction, plant selection, land survey, and cost estimating. AutoCAD will be surveyed and utilized for the computer-aided drafting and design portion of this course. (F, Sp, Su)

LAND 283 Beginning LANDCADD 3
Prerequisite: LAND 282 2.0 minimum
 This course assumes basic AutoCAD experience and covers the Site Design LANDCADD package. Site planning and the related modules in site analysis, coordinate geometry, planting design, plant selection, and construction details will be demonstrated and hands-on exercises will be completed. A 3-D landscape design project will also be completed and plotted. (F, Sp)

LAND 284 Advanced LANDCADD 3
Prerequisite: LAND 283 2.0 minimum
 This course continues the use of LANDCADD modules and project development. The student will complete detailed drawings utilizing the site planning package. 3-D customization will also be covered including solid modeling, macro commands, line type creation, and customized symbol library. This is an advanced LANDCADD class. (Sp)

LAND 285 Computer Landscape Animation 3
Prerequisite: LAND 282 2.0 minimum
 This course will familiarize the student with the animation aspects of computer design and presentation. The student will learn to produce an animation project using the latest computer technology. Students will also become familiar with the integration of video and animation in various applications. (Sp)

LAND 286 LANDCADD: Photo Imaging 3
Prerequisite: None
Recommended: LAND 282
 This computer course will cover how to use photo-imagery and animation in a landscape design situation by way of lecture, video, and computer usage. Computer painting as well as imaging will be demonstrated. Various software will be utilized. (Sp)

LAND 288 Beginning Site Designer CAD 3
Prerequisite: None
 This course provides an introduction to the Site Designer computer design software. The class presents the site planning module as well as topography, plant selection, landscape construction, and rendering. All modules will be presented and several design projects will be completed. No previous computer experience necessary. (F, Sp)

LAND 289 Land Computer Design/Studio 3
Prerequisite: LAND 282 2.0 minimum
 This course involves the use of computer animation presentation software in the three-dimensional arena. Various 3-D presentation softwares will be utilized to create graphic animations and presentations. (Sp)

LAND 295 Landscape Project Lab 1-4
Prerequisite: Department Approval
 This project lab is designed for students who wish to pursue a specialty area in landscape architecture beyond that which is offered in our curriculum. Inquiry through research and design of landscapes is required. (F, Sp, Su)

LEGL - Legal Assistant/Law

LEGL 115 Legal Assistant Career/Ethics 3
Prerequisite: Reading Level 5 and Writing Level 6
 Introduction to the legal assistant's role in the legal system, including essential skills used in the litigation process and law practice. Introduces student to legal terminology, legal analysis, procedural, and substantive law. Surveys paralegal employment and regulation. 2.0 minimum required to continue program. (F, Sp, Su)

LEGL 120 Legal Research I 3
Prerequisite: LEGL 115 2.0 minimum
Recommended: LEGL 215
 Introduces research procedures and resources for finding federal and Michigan law, using digests, encyclopedias, reporters, statutes, court rules, treatises, administrative publications, citators, etc. Students complete research assignments utilizing the publications, and the assignments must be completed using the Michigan Uniform System of Citation. Some classes may be at off-campus libraries. (F, Sp)

LEGL 121 Legal Writing I	3	LEGL 220 Internat Legal Issues/Organiza	3
Prerequisite: WRIT 122 2.0 minimum or Writing Level 9) and LEGL 115 2.0 minimum and (LEGL 120 1.0 minimum or Concurrently)		Prerequisite: LEGL 215 2.0 minimum	
Recommended: LEGL 215		This class will introduce global issues and organizations from the legal perspective and related economic and ethical perspectives. Cases based on events from around the globe will be used to illustrate principles, structures, and perspectives of citizens from many countries. Students will examine how these topics impact their daily activities. (Sp)	
Students will learn to analyze court opinions and apply them to particular fact situations. This skill will then be used to write summaries of court opinions, legal memoranda, appellate briefs, and other legal documents. Learning methods include reading assignments, class discussion, lecture, and writing assignments of increasing difficulty. (F, Sp)		LEGL 221 Real Estate Transaction	3
LEGL 160 Critical Thinking in Law	3	Prerequisite: LEGL 115 2.0 minimum and LEGL 215 2.0 minimum	
Prerequisite: None		Covers fundamental principles of real estate property law and introduces the student to common types of real estate transactions encountered by a legal assistant in a typical real estate practice. Subject matter includes deeds, land contracts, mortgages, title insurance, environmental issues, forfeitures and foreclosures, and landlord-tenant relationships. (F)	
This course strongly emphasizes the "learn by doing" approach, specifically by utilizing group dynamics. The panorama of thinking skills, particularly those relevant in law and criminal justice, will be examined and practiced. Innovative evaluation skills, both personal and group, are a regular part of each session. (F, Sp)		LEGL 222 Probate Law and Procedure	3
LEGL 210 Litigation Procedures	4	Prerequisite: LEGL 115 2.0 minimum and LEGL 215 2.0 minimum	
Prerequisite: LEGL 115 2.0 minimum		Probate process will be addressed in detail, from commencement of proceedings through closing the estate of a decedent. Other topics will include wills, trusts, and related topics. Emphasis is on the part played by the legal assistant in preparation of documents and other probate practice tasks. (Sp)	
Recommended: LEGL 215		LEGL 223 Domestic Relations	3
Provides in-depth study of pre-trial, trial, and post-trial practice and procedure. Emphasizes Michigan and federal rules of court. Detailed study of drafting pleadings, discovery procedures, and case preparation for trial and appeal. Also covers evidentiary rules as they relate to trial practice and preparation. (F, Sp, Su)		Prerequisite: LEGL 115 2.0 minimum and LEGL 215 2.0 minimum	
LEGL 211 Tort Law	2	In-depth study of marriage, divorce, separation, annulment, paternity proceedings, custody, support, property division, and other areas of domestic relations law. Emphasis will be on the legal assistant's role in dealing with clients and applying appropriate statutes, case law, and court rules as part of a domestic law practice. (Sp)	
Prerequisite: LEGL 115 2.0 minimum		LEGL 224 Administrative Law	3
Recommended: LEGL 215		Prerequisite: LEGL 115 2.0 minimum and LEGL 215 2.0 minimum	
Covers principles of negligence, intentional torts, and strict liability. Emphasizes the role of the legal assistant in dealing with these areas of law in actual practice situations. (F, Sp)		The relationship of governmental administrative agencies to private citizens is explored by studying how law is created and enforced by such agencies at the state and federal levels. Legal assistant students will focus on topics including rule making procedures, regulations, adjudication, licensing, and informal action. (F)	
LEGL 215 Busn Law I, Basic Principles	3	LEGL 225 Legal Research and Writing II	3
Prerequisite: None		Prerequisite: LEGL 120 2.0 minimum and LEGL 121 2.0 minimum	
Introduction to the legal system, its purpose, and the fundamental principles of various areas of the law. Course content includes sources of law, court procedures, contracts, torts, crimes, constitutional rights, no-fault auto insurance, landlord-tenant law, and bailments. Taught in traditional classroom style, via self-paced Computer Managed Learning (C.M.L.) or via the Virtual College (V.C.). (F, Sp, Su)		Reviews principles of legal research, analysis, and writing. Introduces student to computer-assisted legal research (e.g. LEXIS or Westlaw). Student will draft legal memoranda, opinion letters, and an appellate brief based on extensive research assignments in federal and Michigan publications. Some classes may be at off-campus libraries. (F, Sp)	
LEGL 216 Busn Law II, Commercial Law	3	LEGL 226 Legal Interview/Investigation	3
Prerequisite: LEGL 215 1.0 minimum		Prerequisite: LEGL 115 2.0 minimum and LEGL 215 2.0 minimum	
An in-depth analysis of the Uniform Commercial Code allows students to explore the law of sales, commercial paper, secured transactions, banking, insurance, and debtor-creditor rights. Taught in traditional classroom style or via self-paced Computer Managed Learning (C.M.L.). (F, Sp, Su)		Interviewing and investigation methods including information gathering, analysis, and effective communication. Emphasis will be placed on the role of the legal assistant with numerous practical exercises. (Sp)	
LEGL 217 Busn Law III, Busn Organiza	3	LEGL 227 Bankruptcy and Collections	3
Prerequisite: LEGL 215 1.0 minimum		Prerequisite: LEGL 115 2.0 minimum and LEGL 215 2.0 minimum	
Introduces basic business organizations, including agency law, partnerships, sole proprietorships, and corporations. Additionally, the course will delve into government regulation of business, real estate, wills, trusts, and estates. Taught in traditional classroom style or via self-paced Computer Managed Learning (C.M.L.). (F, Sp)		Explores federal bankruptcy law and procedure with emphasis on the legal assistant's role in collecting information, interviewing clients, and preparing documents. Topics include a comparison of selected chapters within the bankruptcy code; exemptions, preferences, petitions, schedules, and the part played by the bankruptcy trustee. (Su)	
LEGL 218 Litigation Specialties	3	LEGL 228 Computer Tech for Legal Assist	3
Prerequisite: LEGL 211 2.0 minimum and LEGL 215 2.0 minimum		Prerequisite: CABS 113 2.0 minimum and LEGL 120 2.0 minimum	
Covers several specialty areas of law, for example personal injury, professional malpractice, products liability, workers' compensation, and no-fault auto insurance. Emphasizes role of legal assistant in these practice areas, including drafting of legal instruments. (F)		Recommended: Windows 95 and Keyboarding Experience	
LEGL 219 Adv Busn Law for Acct Majors	4	This course focuses on computer technology as it is applied within the law office, including the use of computers to perform legal assistant functions in litigation support, legal research, communication and case management applications, such as calendar and docket control. (F, Sp)	
Prerequisite: LEGL 215 1.0 minimum		LEGL 280 Legal Assistant Internship	3
Recommended: Accounting Background		Prerequisite: Department Approval	
This self-paced course is intended for students majoring in accounting who have a goal of becoming a Certified Public Accountant (CPA). This course covers the law of sales; commercial paper; security devices; debtor-creditor relations; bankruptcy; insurance; agency; partnership; corporations; wills, trusts and estates; employment regulation; real property; and accountant's liability. This course is taught via Computer Manager Learning (C.M.L.). (F, Sp)		Student will experience the paralegal career by working as a legal assistant in a supervised capacity. Placements include private law firms, governmental law offices, courts, corporations, and other law-related settings. Requirements include at least 160 hours in the workplace, weekly reports, periodic meetings, and performance evaluations by on-site supervisor. (F, Sp, Su)	

LING - Linguistics**LING 230 Introduction to Linguistics** 3**Prerequisite:** None

Examines human language from the perspective of contemporary American linguistics: generative syntax, phonology, and morphology. Special attention to the structure of English. Considers regional and social variation, and implications for teachers of language skills. (Sp)

MACH - Machine Tool Technology**MACH 100 Manufacturing Processes** 4**Prerequisite:** None**Recommended:** MATH 050 or Math Level 4

This course provides students with a comprehensive study of the materials, concepts and processes used in modern manufacturing which is augmented by field trips to local manufacturing plants. This course is designed for those who are pursuing careers in manufacturing design, engineering and supervision. (F, Sp, Su)

MACH 105 Machine Tool Survey 3**Prerequisite:** None**Recommended:** MATH 050 or Math Level 4

Informs students of the machine tool principles and practices used in industry. Safety, terminology, measurement and procedures are used to complete required projects. A working knowledge of hand and machine tools is achieved through a series of lectures, demonstrations and hands-on projects. (F, Sp, Su)

MACH 110 Machine Tool Technology I 4**Prerequisite:** MACH 105 2.0 minimum

Informs students of shop safety, shop terminology, hand tools, machine tools, measurement and layout practices. To complete the course, a series of lectures, demonstrations and projects are used to guide the students. The competency required to successfully complete this course is at the apprentice level. (F, Sp)

MACH 111 Machine Tool Technology II 4**Prerequisite:** MACH 105 2.0 minimum**Recommended:** MACH 110

This course is structured to apply hands-on applications to metal working saws, mills, drills and surface grinders. Bench work and layout procedures with technical terminology and mathematical applications are developed to the technical level of an apprentice. (F, Sp)

MACH 112 Machine Tool Technology III 4**Prerequisite:** MACH 110 2.5 minimum and MACH 111 2.5 minimum

This course will use indexing, precision grinding, close tolerance milling, lathe work and broaching to complete the required projects. The student will accomplish these goals by using modern machine shop technology, applied math skills, planning and precision measuring instruments. (Sp)

MACH 120 Effect Use Machinery Handbook 4**Prerequisite:** None**Recommended:** MATH 114 or TECH 101

Machinery's Handbook has been recognized as the "bible" for all phases of the metal working industry. This course will familiarize each student with the effective utilization of information contained in Machinery's Handbook. (F, Sp, Su)

MACH 130 Die Construction 4**Prerequisite:** None**Recommended:** MACH 110 and MACH 111

This course will provide each student with a basic understanding of the essential principles of cutting and forming operations; die components such as punches, punch plates, die blocks and strippers; and an in-depth knowledge of how to repair and maintain the equipment common to the die industry. (Sp)

MACH 135 Metallurgy and Heat Treat 4**Prerequisite:** None

This course is designed to give students a working knowledge of the properties, uses and heat treat processes of commonly used metals and alloys. The basic principles of metallurgy presented apply to the design, selection, processing and testing of metal products. (F, Sp, Su)

MACH 140 Tooling Theory and Practices 4**Prerequisite:** None**Recommended:** MACH 110 and MACH 111

This course examines tooling used in mechanical material removal. Tooling materials from high-speed steel to diamond will be discussed and demonstrated. Tooling geometry, resharpening methods, speeds and feeds, failure mechanisms and problem diagnosis will be addressed. Students will analyze tooling performance and write up technical reports. (F)

MACH 194 Machine Tool Tech Project Lab 4**Prerequisite:** Department Approval**Recommended:** MACH 110 2.5 minimum or MACH 111 2.5 minimum

An advanced course for students wishing to do in-depth work in the machine shop area or to develop trade-entry skills. Students select projects compatible with their individual fields of work. (Approval may be given to take this course twice for a maximum of eight credits.) (F, Sp, Su)

MACH 210 Prin Electric Discharge Mach 4**Prerequisite:** None**Recommended:** MACH 105 and MACH 111 and CNC 110

This course introduces the student to the fundamentals of Electrical Discharge Machining (EDM). Safety, principles of operation, programming and operation of both Ram and Wire EDM are explored. Lectures, demonstrations and projects are used. Projects assigned will require setup, programming and operation of EDM machines. (F, Sp)

MACH 212 Compound Angles 4**Prerequisite:** MATH 114 2.0 minimum**Recommended:** MATH 115

This course combines solid trigonometry, enabling students to solve problems involving angles in three-dimensional space in industrial applications. Emphasis on applications of actual tooling setups for complex machining operations is used to make the course relate to real life situations. (Sp)

MASG - Massage Therapy**MASG 270 Massage Therapy-Beginning** 2**Prerequisite:** None**Recommended:** BIOL 145 2.5 minimum (previously ANAT 145)

This course introduces the student to Swedish massage. The student will learn the history, theory, terminology, physiology, and techniques of Swedish massage. (F, Sp, Su)

MASG 271 Massage Therapy-Intermediate 2**Prerequisite:** MASG 270 2.5 minimum

This course builds upon the information and techniques learned in MASG 270. Following a review of MASG 270, the student is introduced to specialized massage techniques. The student will learn contraindicated techniques and exploration of Swedish acupressure. (F, Sp, Su)

MASG 275 Touch for Health 1**Prerequisite:** None

This course introduces the student to the combination of ancient Oriental principles combined with the modern practice of applied kinesiology. The student will learn basic muscle testing and techniques to balance the body's natural energies theory putting the body into balance optimizing overall health. (F, Sp)

MASG 277 Polarity Therapy I 2**Prerequisite:** None

This course introduces the student to Polarity Therapy as a form of natural healing and touch therapy that balances the Life Energy of the physical body. Hands-on application of Polarity Energy balancing techniques, theory, and philosophy are taught. Energy flow in and around the body, healing environments for relaxation, balance, and harmonizing of the human energy field are explored. (F, Sp)

MASG 278 Polarity Therapy II 2**Prerequisite:** MASG 277 2.5 minimum

This course will deepen the student's understanding of polarity therapy. Advanced hands-on techniques and sequences will be taught to balance the various energy patterns, elements, and specific areas of the physical body. Lectures will be on the philosophical, energetic, mental, emotional, spiritual principles inherent in the Polarity model. (F, Sp)

MASG 279 Business Applications/Masg 2**Prerequisite:** MASG 270 2.5 minimum

This course introduces students to aspects of business and marketing in the field of massage and body work. Emphasis is placed on development of a professional and personal business sense using planning and persistence, client-practitioner relationships, ethics, research, marketing strategy, goal-setting, motivation, and professional legalities. (F, Sp)

MASG 281 Sports Massage Techniques 2**Prerequisite:** MASG 280 2.5 minimum or Concurrently

The student will learn massage techniques and therapies beneficial to athletes. Pre- and post-athletic event modalities and athletic training massage are emphasized. Course includes relevant anatomy, physiology, pathology, massage applications, and protocol for setting-up events. Participation at instructor approved sporting event required. (F, Sp)

MASG 282 Clinical/Rehab Massage Tech I 4**Prerequisite:** BIOL 145 2.5 minimum (previously ANAT 145) and MASG 271 2.5 minimum

This course will introduce the student to the clinical and rehab massage techniques commonly used to treat chronic pathological conditions of the upper portions of the human body. A review of anatomy and physiology relevant to massage will be coupled with an introduction to the more commonly occurring pathological conditions of the head, neck, upper extremities, and torso followed by the introduction of massage techniques typically employed to treat those conditions. (F)

MASG 283 Clinical/Rehab Massage Tech II 4**Prerequisite:** MASG 282 2.5 minimum

This course will introduce the student to the clinical and rehab massage techniques commonly used to treat chronic pathological conditions of the lower portions of the human body. A review of anatomy and physiology relevant to massage will be coupled with an introduction to the more commonly occurring pathological conditions of the abdomen, pelvis, hips, lower extremities, feet, and other lower torso areas followed by the introduction of massage techniques typically employed to treat those conditions. (Sp)

MASG 290 Massage Lab Practicum 1**Prerequisite:** MASG 271 2.5 minimum or Concurrently

This course consists of supervised practice of massage techniques in basic massage, polarity therapy, clinical, and sports massage. This practicum course must be successfully completed three times to meet the 96 hours required for the Massage Therapy Certificate of Achievement. (F, Sp, Su)

MATH - Mathematics**MATH 001 Math Minus Anxiety Workshop** .5**Prerequisite:** None

This workshop addresses anxiety as it relates to mathematics. The session will focus on causes and management of math anxiety. Some problem solving and study skills will be included. Students at any math level may enroll. (F, Sp)

MATH 050 Math-Principles and Practices 4**Prerequisite:** Math Level 3 and Reading Level 3 and Writing Level 2

Scientific calculator required. This course reviews mathematical operations involving fractions and decimals. Topics include percents, ratios, proportions, U.S. and metric measurements, integers, statistical graphs, Pythagorean Theorem, perimeter, area, and volume. It also introduces algebraic concepts using expressions and equations. Problem solving, estimation, and reasoning skills are taught. The calculator and real-life applications are integrated throughout the course. (F, Sp, Su)

MATH 107 Introductory Algebra 4**Prerequisite:** (MATH 050 2.0 minimum or Math Level 4) and Reading Level 5 and Writing Level 2

Graphing calculator required. Topics include properties of real numbers and exponents, variable expressions, solving linear and quadratic equations, polynomial operations including factoring, graphing, solving absolute value equations, rational expressions and equations, and ratio and proportion. Graphing calculator, diverse, real-life applications, and geometry are integrated throughout the course. (F, Sp, Su)

MATH 112 Intermediate Algebra 4**Prerequisite:** (MATH 104 2.0 minimum or MATH 107 2.0 minimum within 2 years or Math Level 5) and Reading Level 5 and Writing Level 4

Graphing calculator required. This is an extension of beginning algebra, using the graphing calculator, with emphasis on graphing and diverse, real-life applications, including linear, quadratic, rational, and other functions. Also emphasized are polynomials, rational expressions, radicals, rational exponents, equations, inequalities, systems of equations, with an introduction to complex numbers, interpreting data and matrices. (F, Sp, Su)

MATH 114 Technical Math I 4**Prerequisite:** (MATH 050 2.0 minimum or Math Level 4) and Reading Level 3

This course introduces and/or reviews algebra, geometry, and trigonometry. Topics include order of operations, simplifying algebraic expressions, powers, roots, formulas, area, volume, ratio and proportion, linear and quadratic equations, linear systems of equations, graphing, angles, triangles, Pythagorean Theorem, and right triangle trigonometry. Emphasis is placed on problem-solving techniques for technical applications. (F, Sp)

MATH 115 Technical Math II 4**Prerequisite:** MATH 114 2.0 minimum and Reading Level 5

A continuation of MATH 114. Topics include: congruent and similar triangles; polygons; circles with angles, chords, and tangents; applications of right and oblique triangles using the Pythagorean Theorem, trig functions, law of sines, law of cosines, and law of cotangents. Emphasis is placed on problem-solving techniques for technical applications. (F, Sp)

MATH 117 Math for Business 4**Prerequisite:** (MATH 104 2.0 minimum or MATH 107 2.0 minimum or Math Level 5) and Reading Level 5 and Writing Level 4

This course surveys math applications in business. Applications representing management, marketing, finance, accounting, and statistics are used. Analysis of situations in business and correct use of business theory is emphasized in addition to accuracy in math. (F, Sp)

MATH 121 College Algebra I 4**Prerequisite:** (MATH 112 2.0 minimum or Math Level 6) and Reading Level 5 and Writing Level 4

This course provides the foundation in college algebra essential for all subsequent mathematics courses. (After completing MATH 121, students may take STAT 170, MATH 122, 128, 130, 141 and 201.) Topics include polynomial, rational, radical, exponential, and logarithmic functions; solving equations/inequalities algebraically and graphically; and mathematical modeling/regression in problem solving. (F, Sp, Su)

MATH 122 College Algebra II and Trig 3**Prerequisite:** (MATH 121 2.0 minimum or Math Level 8) and Reading Level 5 and Writing Level 4

Second in two-course sequence, following MATH 121. Topics include right triangle trigonometry, trigonometric functions, graphs, identities and equations, inverse trig functions, laws of sines/cosines, binomial theorem, systems of linear equations, vectors, polar coordinates, sequences, series, permutations, combinations. Degree credit may not be earned in both MATH 121-122 and MATH 126. (F, Sp, Su)

MATH 126 College Algebra and Trig 5**Prerequisite:** (MATH 112 3.5 minimum or Math Level 7) and Reading Level 5 and Writing Level 4

Intensive course covering the same material as MATH 121-122. Topics include algebraic and transcendental functions, solving equations/inequalities algebraically and graphically, mathematical modeling, trigonometric identities, laws of sines/cosines, binomial theorem, vectors, polar coordinates, sequences, series, permutations and combinations. Degree credit may not be earned in both MATH 126 and MATH 121-122. (F, Sp, Su)

MATH 128 Mathematics: A Practical Survey 3**Prerequisite:** (Math 121 2.0 minimum or Math Level 8) and Reading Level 5 and Writing Level 4

This course is a survey of mathematical topics for students majoring in fields outside the technical sciences. The student is introduced to practical topics and their historical significance. Topics include data gathering, analysis and interpretation, finance: growth and decay models; optimization models; and geometry as art. (F, Sp, Su)

MATH 130 Finite Mathematics 3
Prerequisite: (MATH 121 2.0 minimum or Math Level 8) and Reading Level 5 and Writing Level 4
 This is an alternate course to MATH 122 for students whose programs do not require trigonometry. Topics studied include mathematics of finance, matrices, linear programming, permutations, combinations, probability, random variables, game theory, and Markov chains. In addition, students will solve applied problems by completing required computer assignments. (Sp)

MATH 141 Calculus with Applications 3
Prerequisite: (MATH 121 2.0 minimum or MATH 126 2.0 minimum or Math Level 8) and Reading Level 5 and Writing Level 4
 This course provides an introduction to calculus with an emphasis on applications in business, economics, social/life sciences and other fields not requiring an extensive study of calculus. Topics include functions, derivatives, the definite integral and their applications. (Mathematics, Physical Science, Computer Science, and Engineering majors should take MATH 151.) (F, Sp, Su)

MATH 151 Calculus I 4
Prerequisite: (MATH 122 2.0 minimum or MATH 126 2.0 minimum or Math Level 9) and Reading Level 5 and Writing Level 4
 The first course in a three semester calculus sequence. Topics include limits, continuity, derivatives of algebraic, trigonometric, exponential and logarithmic functions, linear approximation, integration and the fundamental theorems of calculus. Applications of the calculus to both physical and geometric problems are emphasized. (F, Sp, Su)

MATH 152 Calculus II 4
Prerequisite: MATH 151 2.0 minimum and Reading Level 5 and Writing Level 4
 The second course in a three-semester calculus sequence. Topics include techniques and applications of integration, L'Hopital's rule, derivatives of inverse trigonometric functions, improper integrals, sequences and infinite series, power series representation of functions, conic sections, and polar coordinates. (F, Sp, Su)

MATH 201 Math for Elemen Teachers I 3
Prerequisite: (MATH 112 2.0 minimum or Math Level 6) and Reading Level 5 and Writing Level 6
 This course is the first in a two-course sequence providing mathematical background for prospective elementary teachers. Emphasis is on active engagement in mathematical investigations to develop problem-solving skills and conceptual knowledge essential for teaching elementary school mathematics. (F)

MATH 202 Math for Elemen Teachers II 3
Prerequisite: MATH 201 2.0 minimum and Reading Level 5 and Writing Level 6
 This course is the second in a two-course sequence providing mathematical background for prospective elementary teachers. Emphasis is on active engagement in mathematical investigations to develop problem-solving skills and conceptual knowledge essential for teaching elementary school mathematics. (Sp)

MATH 253 Calculus III 4
Prerequisite: MATH 152 2.0 minimum and Reading Level 5 and Writing Level 4
 The last course in a three-semester calculus sequence. Multivariable calculus and vector analysis are studied. Topics include vector algebra, curves and surfaces in 3-space, vector valued functions, partial derivatives, multiple integrals, and line integrals. Applications of all these topics are presented. (F, Sp, Su)

MATH 254 Intro: Differential Equations 3
Prerequisite: MATH 253 2.0 minimum and Reading Level 5 and Writing Level 4
 An introduction to the basic methods for solving ordinary differential equations. Topics include the methods of undetermined coefficients, variation of parameters, series, Laplace transforms, and numerical methods. Applications are emphasized. (F, Sp, Su)

MATH 260 Linear Algebra 3
Prerequisite: MATH 253 2.0 minimum and Reading Level 5 and Writing Level 4
 This introduction to linear algebra includes the study of systems of linear equations, matrix algebra, vector spaces, linear transformations, eigenvalues and eigenvectors, with applications. (Sp)

MATH 281 Honors Math Seminar I 1
Prerequisite: MATH 151 2.0 minimum and Department Approval
 Students solve a set of challenging mathematics problems which are not normally encountered in other classes. Creative and independent thinking is encouraged and developed. (Sp)

MATH 282 Honors Math Seminar II 1
Prerequisite: MATH 281 2.0 minimum and Department Approval
 Students solve a set of challenging mathematics problems which are not normally encountered in other classes. Creative and independent thinking is encouraged and developed. (Sp)

MATH 295 Indep. Study in Mathematics 1-4
Prerequisite: Department Approval
 An opportunity for self-directed learners to explore topics related to, but not taught in the curriculum. Students spend at least two hours per week for each credit. A detailed proposal must be submitted by the student for approval by the Department and supervising instructor prior to registration. (F, Sp, Su)

METR - Meteorology

METR 220 Introduction to Meteorology 4
Prerequisite: Reading Level 5 and Writing Level 4 and Math Level 5
 This course includes a study of the interrelationships of the elements (temperature, moisture, pressure, wind) that create weather. Human-atmospheric interactions (e.g., pollution, severe weather, greenhouse effect), world climate, and climatic change are also discussed. Laboratory includes making weather observations and measurements and learning how to draw and interpret weather maps. (Sp)

MFGM - Manufacturing Maintenance

MFGM 101 Industrial Hydraulics 4
Prerequisite: None
 Industrial hydraulics introduces the theory of fluid power and circuits covering pumps, pressure valves, flow valves, cylinders, filters and motors, etc., as they are used in industry today. This will be done with lectures and labs related to each of the respective components. (F, Sp)

MFGM 102 Industrial Pneumatics 3
Prerequisite: None
 Introduces the students to the theory of industrial pneumatic systems. The theory of gas laws, pumps, filters, valves, etc., will be discussed as they are applied to the industrial pneumatics systems. The use of lecture and labs will give the students a hands-on approach to the use of pneumatics. (F, Sp)

MFGM 110 Machine Maintenance I 4
Prerequisite: None
 Theory and industrial application of machine repair, preventive maintenance, safe practices and troubleshooting, with actual dismantling and rebuilding of tool room machines. (F, Sp)

MFGM 111 Machine Maintenance II 4
Prerequisite: MFGM 110 2.0 minimum
 Advanced theory and practice of machine tool repair including preventive maintenance. The theory and repair of pumps and pneumatic tools will be covered. (F, Sp)

MFGM 120 Industrial Presses 4
Prerequisite: None
 Covers different types of mechanical presses, terminology, purposes and functions in industry. Includes movies and slides of mechanical action, maintenance systems and safety, supplemented by visits to plants using presses and press repairs. For mechanical trades apprentices, press repair and maintenance people, stamping plant employees, press operators and die setup employees. (F, Sp)

MFGM 125 Rigging 2
Prerequisite: None
 Covers uses and strengths of ropes, chains, block and tackles, and the construction and erection of gin poles, with a study of rope knots used in rigging. Safe working strength of slings, hooks, sheaves, ropes and chains, and the use of personal safety equipment will be covered. (Sp)

MFGM 170 Fork Lift Truck Driver Train .5
Prerequisite: None
 Students will learn the basic safety guidelines and basic operational procedures of industrial fork trucks. The instruction will combine lecture, written materials and hands-on operation of a fork truck. (F, Sp, Su)

MGMT - Management

MGMT 101 Management Special Topics	1	MGMT 231 Team Development	3
Prerequisite: None		Prerequisite: None	
This course explores recently identified current issues, knowledge, skills, attitudes and/or behaviors relevant to the professional development of managers and management students. (F, Sp, Su)		This course defines and examines team building, team leadership, and self-managed teams in the context of today's workplace. Students develop skills in writing team mission and vision statements, and team goals and action assignments. Students will develop skills in chartering, problem solving, decision-making, conducting effective meetings and work sessions, negotiating, and presenting. (F, Sp)	
MGMT 150 Managing Customer Relations	3	MGMT 234 Diversity in the Workplace	3
Prerequisite: None		Prerequisite: Reading Level 5	
This course is designed to help customer service workers and managers explore the dynamics of customer service and customer relations. The course includes strategies for providing for customers needs, behavioral skills and knowledge for effective customer service, verbal and non-verbal skills for effective customer communication, and techniques for measuring success. Focus is on the dynamics of building successful relationships. (F)		This course explores cultural, gender/sexual, physical, and other minority experiences in the workplace and in the world. The management of human resources will be examined from a global perspective. Emphasis is on helping the majority and the minority become aware of the other's opinions, feelings, and perspective. Instruction takes an experiential, awareness training approach. (F, Sp)	
MGMT 200 Creative Thinking for Business	3	MGMT 235 Independent Study/Management	1-3
Prerequisite: None		Prerequisite: Department Approval	
Recommended: Have Taken at Least Two or More BUSN, MGMT or Business Experience		Students design and implement special research projects to apply personal and professional experience to an academic area of interest, linking theory with practice. Students meet with coordinator and work independently towards completion of project report. Students should plan a minimum 16 hours per credit and ten pages of report per credit. (F, Sp, Su)	
This course takes an experiential approach to helping students understand and explore the elements of the creative process. It is designed to develop skills, eliminate barriers, and allow students to apply thinking skills to business situations. (F, Sp)		MGMT 237 Managing/Continual Improvement	3
MGMT 223 Supervision	3	Prerequisite: None	
Prerequisite: None		Provides an introduction to concepts of quality, continual improvement, systems thinking, and other new management practices. Covers the history of the quality movement including key thinkers/leaders. Explores new ways of thinking and leading, methods for continual improvement teams, and "learning organizations." (F, Sp)	
This course presents supervisory principles and practices for first-line supervisors. Managerial functions of planning, organizing, staffing, directing, and controlling are discussed, along with policies, decision-making, and the responsibilities of supervisors for overall work performance and employee development and evaluation. (F, Sp)		MGMT 239 Time Management	3
MGMT 224 Human Resource Management	3	Prerequisite: None	
Prerequisite: None		Explores relationship between time and stress management; stress is the causal factor for many of our physical and psychological problems. Suggests methods for harnessing its energy positively. Techniques and strategies for wise utilization of time and energy. Emphasis on creating action plan and initiating corrective actions. (F, Sp)	
This is a survey course which examines the role of human resources management and its contribution to the total management effort. Emphasis will be placed on the evolution of human resource management, recruitment and selection, appraising and improving performance, compensation and incentives, safety and health, employee-management relations, and current legislation. (F, Sp)		MGMT 240 How Manager Make Things Happen	2
MGMT 225 Principles of Management	3	Prerequisite: None	
Prerequisite: None		This practical skills-building program concentrates on the functions that most often determine management success. Students will learn how to improve their performance in key areas by analyzing their job, breaking it down into functional components, spotting weaknesses, and taking concrete action to turn them around. (F, Sp, Su)	
This course assists students and current managers in developing an understanding of the skills required to manage effectively in today's workplace. Designed to reflect the dynamics of our changing world, the course covers such topics as management functions/processes, quality, ethics, global issues and the challenges and opportunities of diversity. (F, Sp)		MGMT 241 How Successful Women Manage	1
MGMT 227 Training/Development for Busn	3	Prerequisite: None	
Prerequisite: None		This course is an overview of the various functions and processes involved in management. Students will explore possible explanations for women's slow rate of progress in attaining managerial positions. It is enlightening and an absolute must for any woman who is considering entering or is now a part of management. (F, Sp, Su)	
Training and development for business is a course designed to cover all aspects of training in the business environment. The course will focus on assessing training needs, identifying training barriers, curriculum design, instructional techniques, evaluation, and adult learning theory. (Sp)		MGMT 242 Mgrs Guide/Working With People	1
MGMT 228 Organizational Behavior	3	Prerequisite: None	
Prerequisite: None		Managers who want to work effectively with people—both on and off the job—will find this course full of valuable information. Students will acquire an understanding of human needs and motivation, leadership styles, problem-solving techniques, and effective methods for being assertive. Students will also learn how to deal with difficult behavior through positive work strategies. (F, Sp, Su)	
Examines the dynamics of relationships at work. Integrates and applies behavioral and social science knowledge, using a systems approach, and focusing on the nature of both people and organizations. Students will study individual and group behavior and will have opportunities to work on skills necessary for successful interaction in organizations. (F, Sp)		MGMT 243 How to Delegate Effectively	1
MGMT 229 Compensation Management	3	Prerequisite: None	
Prerequisite: MGMT 224 1.0 minimum		This course will show students how to increase their productivity through delegation. It is designed to increase comfort with the delegation process and demonstrates how this method of organizing and dispersing work can help improve everyday job performance. (F, Sp, Su)	
Recommended: LABR 204		MGMT 244 Supervisory Management	2
Students will gain a practical understanding of the principles and applications of compensation management. Students will study the theories, behaviors, and legal constraints affecting compensation practices, including job analysis, job evaluation methodologies, labor market surveys, variable pay approaches, and the administration of legally mandated and voluntary employee benefit programs. (F)		Prerequisite: None	
		This course is designed to help managers at all levels to develop, enhance and update their skills. Major areas of emphasis include planning, operating, controlling, personnel functions, decision-making, job design, job analysis, and quality control within the department. (F, Sp, Su)	

MGMT 245 Leadership Skills for Managers 1
Prerequisite: None
 In this course, the student will discover the secrets of great leadership and learn about the four basic leadership styles. You will master the art of goal setting, find your most effective leadership style, and know when to use the right style at the right time. (F, Sp, Su)

MGMT 246 Effective Performance Mgmt 1
Prerequisite: None
 An organization's success often rests on the management of its staff. This course provides managers with comprehensive ideas and techniques for human resources programs that increase productivity and profits. (F, Sp, Su)

MGMT 247 Project Management 2
Prerequisite: None
 Gain a comprehensive understanding of the techniques and methodology needed to plan and control any project—large or small—in any industry. Students will examine both basic and sophisticated tools and learn how to use those tools as decision aides during a project's tracking and controlling phase. (F, Sp, Su)

MGMT 248 Team Building 1
Prerequisite: None
 More than ever, teams are a vital force in today's working environment. This course presents positive, practical methods for building and managing effective teams. Learn how to build trust, confidence, and group work skills and how to balance and fine-tune the team process. Participants will focus on key aspects of team building, ranging from recruitment to empowering team members with authority and responsibility. (F, Sp, Su)

MGMT 249 Dealing with Difficult People 1
Prerequisite: None
 Discover how seasoned managers cope with difficult personalities in the workplace. This course covers effective communication and motivational and conflict resolution approaches used by experienced managers. Students will also learn how to avoid difficult behaviors by instituting positive work strategies, structures, and values before problems develop. (F, Sp, Su)

MGMT 250 Fundament Fin/Acct/Non-Fin Mgr 2
Prerequisite: None
 Provides the manager with an understanding of finance. This course will help students learn to read and interpret financial statements, annual reports, and balance sheets. This course will help students use financial and accounting data more effectively. (F, Sp, Su)

MGMT 251 Communication Skills for Mgrs 1
Prerequisite: None
 All managers have a basic tool they can use to effectively get messages across to staff and colleagues: communication. This course presents practical applications for communicating such as writing effective letters, memos and reports, running meetings, conducting interviews, and listening. (F, Sp, Su)

MGMT 252 Deliver a Winning Presentation 1
Prerequisite: None
 This course will provide the student with a basic awareness of the steps necessary for making an effective oral presentation. It is designed for anyone who wants to reduce the fear of public speaking by learning how to deliver presentations. (F, Sp, Su)

MGMT 253 How to Write Winning Reports 1
Prerequisite: None
 This course helps students develop a more concise, straight forward writing style. It will help the student express ideas more clearly in memos, letters, and reports. (F, Sp, Su)

MGMT 254 How to Write a Business Plan 2
Prerequisite: None
 This course is designed for managers who want to give real meaning and power to their company's business plan. Participants will learn how to develop realistic action programs and responsibility plans for allocating scarce resources, installing workable monitoring and control systems, and creating supportive policies and procedures. (F, Sp, Su)

MGMT 256 Strategic Plan/Entrepren Busn 1
Prerequisite: None
 Owners and managers of new and growing businesses, or of companies that operate within an entrepreneurial environment, will learn how to prepare a strategic plan. Students will learn about organizational charts, goal-setting matrices, diagnostic summary sheets, and checklists—all designed to help them create a plan that works. (F, Sp, Su)

MGMT 257 Using Math as a Business Tool 1
Prerequisite: None
 This course is designed to increase familiarity with formulas and calculations most frequently used in business. Participants will learn to apply various ratios to test a company's strength, use statistical tools to read results more accurately, forecast more reliably, and assess the viability of a project through break-even analysis. (F, Sp, Su)

MGMT 258 Strategic Résumés 1
Prerequisite: None
 The résumé is a sales tool for finding new career opportunities. Students will rethink their personal marketing tool, develop strategies, marshal resources, and create a packaged strategic, concise resume to help the applicant stand out and be noticed. (F, Sp, Su)

MGMT 260 How to Analyze the Competition 2
Prerequisite: None
 This course will enable students to pinpoint competitors' strengths and weaknesses so students can identify and act upon competitive challenges before they occur. The course assists students in the design, implementation, and management of a competitor "intelligence" system. (F, Sp, Su)

MGMT 261 Psychology of Selling/Winning 1
Prerequisite: None
 This course helps students realize their full potential for total success. It goes beyond positive thinking or other motivational programs to offer the key that unlocks inner power. It teaches participants what to do to become top professional salespeople and what they should do in order to sell successfully. (F, Sp, Su)

MGMT 262 Keep Satisfied Customers 1
Prerequisite: None
 This course is designed to help simplify the task of keeping customers satisfied. The ultimate goal of this course is to help improve students' abilities to communicate effectively with customers. (F, Sp, Su)

MGMT 263 Successful Marketing/Serv Org 1
Prerequisite: None
 Marketing concepts long associated with manufactured goods are now applied to the service sector. Learn how to create services for markets rather than markets for services. This course is designed for service company managers and others who need to sharpen their competitive edge. (F, Sp, Su)

MGMT 264 How to Write a Marketing Plan 2
Prerequisite: None
 This course is designed for future or current small business owners, marketing managers, product managers, and others responsible for creating the marketing plan. Students will learn how to fuse vital elements to create a marketing plan that is right for their product line, service department, company, or organization. (F, Sp, Su)

MGMT 265 WWW Skills: Busn/Personal Dev 1
Prerequisite: None
 This course is designed for individuals who wish to benefit from online knowledge—the information superhighway, included is a highly visual introduction to the World Wide Web, with Windows overview and basic WWW skills. Students will be introduced to web page creation. The course is designed for interactive WWW learning or reading. (F, Sp, Su)

MGMT 266 Enter International Markets 2
Prerequisite: None
 International trade and marketing is growing rapidly in business. This course will help the student to capitalize on "going global" by providing information on how to research resources, learn terminology, and develop foreign market entry strategy. It is designed for the individual entrepreneur or a manager wishing to improve the bottom line. (F, Sp, Su)

- MGMT 268 Organizing Your Workspace** 1
Prerequisite: None
Organization is a skill that is easy to learn. Personal productivity is reduced by as much as 20 percent or more from ineffective organization of the workspace environment. This course is for anyone who experiences "clutter" in their daily activities. The student will get organized and stay organized as technology impacts the way we work. (F, Sp, Su)
- MGMT 270 Time Management** 1
Prerequisite: None
Time management techniques can be applied to both personal and professional situations. Learners will discover basic principles of time management, and will also become aware of positive and negative stress, relaxation and balance techniques, and ways to reduce stress through changes in lifestyle. (F, Sp, Su)
- MGMT 271 Managing/Resolving Conflict** 1
Prerequisite: None
Conflict can be managed and yield positive results. Students of this course will gain practical knowledge, learn proven techniques, and acquire psychological insights they can use to resolve conflicts successfully. This course uses case studies, critical incidents, and realistic examples of conflict resolution to teach crucial skills. (F, Sp, Su)
- MGMT 272 Success Through Assertiveness** 1
Prerequisite: None
This course will help to put participants in command of their career in order to respond to difficult situations according to individual desires, interests, and feelings. Participants will learn how being properly assertive at the right times and in the right place can help them achieve their goals. (F, Sp, Su)
- MGMT 273 Assess Prsnal Interactn Skills** 1
Prerequisite: None
This course is designed to increase awareness of personal styles and preferences for interacting with others. It is also designed to heighten awareness of styles and preferences of people with whom the student interacts daily. (F, Sp, Su)
- MGMT 274 Personal Financial Planning** 2
Prerequisite: None
This course will show students how to start building financial security. It emphasizes spending strategies and capital-building techniques rather than housekeeping methods. The course is designed for anyone. (F, Sp, Su)
- MGMT 275 How to Build Memory Skills** 1
Prerequisite: None
This course is designed to help the student apply the skills that increase ability to obtain and utilize information. The result of using improved listening and memory skills will help realize leadership potential. (F, Sp, Su)
- MGMT 276 How to Improve Writing Skills** 1
Prerequisite: None
This course helps students strengthen their skills in key communication areas by knowing how to properly use words and phrases associated with business. (F, Sp, Su)
- MGMT 277 Speed Learning** 1
Prerequisite: None
This course offers an entirely different way to read that reduces reading time while increasing comprehension. It teaches how to organize thinking systematically so the reader can learn quickly and efficiently in all reading situations. (F, Sp, Su)
- MGMT 278 Creative Fund-Raising** 2
Prerequisite: None
As traditional funding sources become scarce, creative fund-raising is critical for an organization's survival. This course will guide the student through the process of defining fund-raising in an organization, identifying grant resources, and developing donors through special events. The student will design a strategic fund-raising plan for the solicitation and creative utilization of resources. (F, Sp, Su)
- MGMT 279 Learn APA Write Style for Bus** 1
Prerequisite: None
This course offers a self-paced, hands-on opportunity to learn the rules and style of the Publication Manual of the American Psychological Association. Practice is emphasized, not memorization, allowing the student to use APA as a skill or tool for improving business report writing skills. (F, Sp, Su)
- MGMT 280 Management Internship** 3
Prerequisite: Department Approval
Recommended: Have Completed a Minimum of 30 Credits
This course provides an opportunity to apply classroom learning to a career-related position by working a minimum of 160 hours at an approved work site. A student may do an internship at his/her own job only if the duties are new, management related, and provide an appropriate learning situation. (F, Sp, Su)
- MGMT 300 Managerial Leadership** 3
Prerequisite: None
Recommended: Have Taken Previous MGMT Courses, and/or are Enrolled in the Northwood 3+1 Program, or Have Management Work Experience
Provides an overview of the changing roles of leadership within an organization. A review of historical perspectives in managerial leadership lays a foundation for exploration of the emerging roles and functions of leadership in today's changing environments. Theories and skills are applied to a variety of organizational settings. (F)
- MGMT 304 Organizational Development** 3
Prerequisite: None
Recommended: Have Taken Previous MGMT Courses, and/or are Enrolled in the Northwood 3+1 Program, or Have Management Work Experience
Based on the assumption that all managers must recognize, plan for, and manage organizational change, this course examines the process of improving organization effectiveness by means of a systematic change program. Students practice identifying problems, selecting appropriate interventions, building action plans, and developing facilitator skills. (F, Sp)
- MGMT 329 Adv Mgmt Communication Skills** 3
Prerequisite: None
Recommended: Have Taken Previous MGMT Courses, and/or are Enrolled in the Northwood 3+1 Program, or Have Management Work Experience
This is an advanced course in interpersonal communication skills for business. It includes components of listening, interpersonal communication, oral presentations, interviewing techniques, meeting management, business report writing, and persuasive speaking. This class is both informational and experiential. (F, Sp)
- MGMT 332 Managerial Ethics** 3
Prerequisite: None
Recommended: Have Taken Previous MGMT Courses, and/or are Enrolled in the Northwood 3+1 Program, or Have Management Work Experience
Designed to sensitize participants to the impact of ethics on decision-making, both personal and organizational. Participants will examine the basis for the behavior of managers, their own behavior, various means of controlling organizational behavior, and the basis for ethical standards. (F, Sp)
- MGMT 335 Managerial Statistics** 3
Prerequisite: None
Recommended: Have Taken Previous MGMT Courses, and/or are Enrolled in the Northwood 3+1 Program, or Have Management Work Experience
Application of statistical tools and techniques to improve decision-making processes and reduce managerial decision difficulty from less-than-perfect data. Includes sampling, description of sample data, methods of averaging, standard deviation, probability theory, estimation, and hypothesis testing. (F, Sp)
- MGMT 337 Human Resource Mgmt Skills** 3
Prerequisite: None
Recommended: Have Taken Previous MGMT Courses, and/or are Enrolled in the Northwood 3+1 Program, or Have Management Work Experience
Skill areas involved in the management of human resources are developed. Techniques for setting objectives with employees, conducting performance appraisals, and working with employee problems are practiced. Students plan techniques for managing teams and for leading and motivating employees. (F, Sp)

MGMT 338 Current Topics in Management 3**Prerequisite:** None**Recommended:** Have Taken Previous MGMT Courses, and/or are Enrolled in the Northwood 3+1 Program, or Have Management Work Experience

Study of specific current topics and issues that affect managerial/leadership decisions. Students explore internal and external constraints on actions. External factors considered include legal, social, educational, and political. Internal factors include shareholders, employees, and customers. (F, Sp)

MGMT 339 Mgmt Styles/Corp Strategies 3**Prerequisite:** None

Numerous current materials relating to management styles and corporation strategies in Japan will acquaint the student with management as practiced in Japan. Japanese management practices are presented as an alternative managerial style for the United States to explore. (This course is offered only as part of the Japan Adventure Program.) (Sp, Su)

MGMT 346 Managerial Finance 3**Prerequisite:** None**Recommended:** Have Taken Previous MGMT Courses, and/or are Enrolled in the Northwood 3+1 Program, or Have Management Work Experience

This course is designed to provide necessary and practical skills to deal with financial matters and communicate with people who specialize in finance. Topics covered include basic financial analysis, short-term and long-term financing, financial planning, and managing the finance function. (F, Sp)

MGMT 348 Strategic Management/Policy 3**Prerequisite:** (MGMT 225 1.0 minimum or MGMT 300 1.0 minimum) and Any MGMT Course Between MGMT 304-346 (Inclusive) 1.0 minimum

This course pulls together learning from the areas of management and marketing to gain an overall organizational perspective which is applied to strategic plan formulation and implementation for the whole organization. The process involves pursuing organizational mission while managing the relationship of the organization to its environment. (F)

MILS - Military Science**MILS 101 Leadership: Military Professn** 1**Prerequisite:** None

This course analyzes the military profession and organization of the U.S. Army from several academic perspectives and explores the technical, ethical, and personal ramifications of service as an officer in the U.S. Army. This course provides an introduction to military leadership which draws upon examples from military history. (F, Sp)

MILS 102 Leadership:Wilderness Survival 1**Prerequisite:** None

This course includes but is not limited to psychology of survival, survival planning, survival kits; procurement of food, shelter, and water; fire craft; field-expediant weapons, tools and equipment; desert/tropical/cold weather survival and basic survival medicine. Hands on experience. (F, Sp)

MILS 201 Leadership: The Military Leader 1**Prerequisite:** None

This course examines individual leadership development using standardized assessment technology to evaluate potential to command and lead. Communications, administrative, personal relations and decision-making skills training, ethical career assessment, and sources of professional obligation will be reviewed. Lab includes rappelling and smallbore rifle marksmanship. (F, Sp)

MILS 202 Intro to Land Navigatn/Tactics 1**Prerequisite:** None

This course addresses the basics of reading military topographic maps, basic land navigation, and small unit tactics. (F, Sp)

MKTG - Marketing**MKTG 100 Current Issues in Business** 3**Prerequisite:** None

This is an introductory course designed to enhance a student's occupational preparedness and competence by promoting a better understanding of the competitive enterprise system. Classroom instruction will be combined with relevant marketing projects and professional community involvement to give students a solid foundation of marketing knowledge and managerial "know-how." (F, Sp)

MKTG 101 Marketing Special Topics 1**Prerequisite:** None

This course explores recently identified current issues, knowledge, skills, attitudes and/or behaviors relevant to the professional development of professionals in the marketing field and students of marketing. (F, Sp, Su)

MKTG 119 Mktg/Manage Your Profess image 3**Prerequisite:** None

This course is a complete guide for everything people and their companies need to know to do the right thing at the right time in every business situation. Students will understand the importance of a professional image as it relates to business success and will develop a personal image development plan. (F, Sp)

MKTG 120 Sales 3**Prerequisite:** None

This course presents the fundamentals of selling. Topics include the basics of sales, motivation, and human relations. The course is designed so that students will not only learn about selling, but to be able to do it. (F, Sp)

MKTG 122 Field Sales Internship 3**Prerequisite:** Department Approval**Recommended:** Have Completed a Minimum of 30 Credits

This course provides an opportunity to apply classroom learning to a career-related position by working a minimum of 160 hours at an approved work site. A student may do an internship at his/her own job only if the duties are new, sales related, and provide an appropriate learning situation. (F, Sp, Su)

MKTG 123 Comput Field Sales Internship 3**Prerequisite:** Department Approval**Recommended:** Have Completed a Minimum of 30 Credits

This course provides an opportunity to apply classroom learning to a career-related position by working a minimum of 160 hours at an approved work site. A student may do an internship at his/her own job only if the duties are new, sales related, and provide an appropriate learning situation. (F, Sp, Su)

MKTG 130 Retailing 3**Prerequisite:** None

Students will gain understanding of activities and strategies used in selling goods to ultimate consumers. The course develops an awareness of problems facing retailers and explores feasible solutions. Career opportunities in retailing are examined. (F, Sp)

MKTG 131 Merchandising 2**Prerequisite:** None

Functions and policies: what, when, where, how much, how to, and from whom to buy. Introduction to merchandising, merchandise management, store management and operations, how to evaluate and set up effective controls, and new trends in merchandising. Career opportunities are also explored. (Sp)

MKTG 140 Introduction to Advertising 3**Prerequisite:** None

Methods and techniques used in modern advertising. Information on the entire advertising function. Preparation of an advertising campaign will be required to facilitate hands-on understanding of the component parts which include marketing review, marketing plan, creative strategy, and media selection. (F, Sp)

MKTG 200 Principles of Marketing 3**Prerequisite:** None**Recommended:** BUSN 118

Designed to define marketing, develop an understanding of the marketing concept and functions, and generally investigate the field of marketing. Will cover the marketing environment; identifying consumer needs; examining product, price, promotion; and distribution strategies within our society. Provides a basic marketing understanding with practical applications. (F, Sp, Su)

MKTG 202 Managerial Marketing	3	MTEC 121 Audio Recording I	4
Prerequisite: MKTG 200 1.0 minimum Recommended: MKTG 204 and Second Year Student The course focuses on the solution of marketing problems through case analysis. It relates marketing to the total enterprise by analyzing problems, and suggesting approaches to business decision-making. Particular attention is paid to the elements of the marketing mix and how marketing management deals with these variables. (Sp)		Prerequisite: MTEC 120 2.0 minimum Recommended: Basic Computer Skills and MTEC 220 A beginning course in audio recording which covers the basic principles of multitrack recording, both studio and remote. Emphasis is placed on microphone selection and placement, use of mixing consoles and multitrack recorders for the recording session. (F, Sp)	
MKTG 204 Marketing Research	3	MTEC 122 Sound Reinforcement	4
Prerequisite: MKTG 200 1.0 minimum Types of data, sampling, data collection, analysis, interpretation, and applications of marketing research. A practical managerial approach—not a statistical or mathematical orientation. Students will design and execute a marketing research project. (F)		Prerequisite: MTEC 120 2.0 minimum A first course in sound reinforcement. Students learn to design and set-up various reinforcement systems. Included are front-of-house, amplifiers, speakers, monitors, computer-controlled wireless, and the use of chain motors to fly systems. (Sp)	
MKTG 210 Marketing on the Internet	3	MTEC 130 Radio Production I	4
Prerequisite: None Recommended: MKTG 200 and Basic Understanding of Computers and Their Use on the Internet This course will explore the impact of information technology on the practice of marketing. Course content focuses on the internet, its culture and procedures from a marketing perspective, and will include using the internet for customer contact and customer service. This class uses extensive hands-on activities. (F, Sp)		Prerequisite: Reading Level 5 and Writing Level 6 Survey of the radio broadcast industry including careers, qualifications, responsibilities, and station operation. Introduces basic studio production and on-air presentations. (F, Sp, Su)	
MKTG 221 Consumer Behavior	2	MTEC 150 TV Production I	4
Prerequisite: None Covers the basic perspectives involved in consumer motivation and decision-making. Students will investigate relevant variables that shape consumer actions and concepts that integrate the study of consumer behavior with the practice of marketing. (F)		Prerequisite: Reading Level 5 and Writing Level 6 Recommended: Basic Computer Skills This course places special emphasis on the components of effective visual communication. The development of pre-production processes related to visual composition, scriptwriting, storyboarding, lighting, and floor plot designs are emphasized. An introduction to studio and field production formats is included in classroom activities. Class sessions contain instructional and performance exercises. (F, Sp, Su)	
MKTG 229 Public Relations	2	MTEC 152 Video Production Techniques	3
Prerequisite: None Provides an introduction to principles involved in creating and maintaining good public relations. Techniques for developing improved employer-employee relations, customer relations, and the total public relations effort will be discussed and applied. (F, Sp)		Prerequisite: (MTEC 150 2.0 minimum and (MTEC 120 2.0 minimum or Concurrently) or FILM 118 2.0 minimum) and Reading Level 5 and Writing Level 6 Video Production Techniques is designed as an introductory experience to the process of single camera video production. This course will also provide the student with an introductory experience in linear videotape editing. Class sessions will contain instructional and performance exercises which are practical applications of the course content. (F, Sp)	
MKTG 231 Independent Study in Marketing	1-3	MTEC 153 Video Post-Production Technqcs	3
Prerequisite: Department Approval Advanced marketing students design, implement, and draw conclusions relevant to a marketing project in a specific area of interest in marketing. Minimum of 16 hours of work per credit is required. (F, Sp, Su)		Prerequisite: MTEC 152 2.0 minimum or Concurrently and (MTEC 150 2.0 minimum or FILM 118 2.0 minimum) and Reading Level 5 and Writing Level 6 Video Post-Production Techniques is designed to provide the student with an extensive experience in both linear and non-linear post-production technologies. Learning activities within and outside the classroom are designed to provide a solid technical and creative foundation in the procedures used in the creation of video programming. (F, Sp)	
MKTG 235 Marketing Internship	3	MTEC 220 Audio Production II	4
Prerequisite: Department Approval Recommended: Have Completed a Minimum of 30 Credits This course provides an opportunity to apply classroom learning to a career-related position by working a minimum of 160 hours at an approved work site. A student may do an internship at his/her own job only if the duties are new, marketing related, and provide an appropriate learning situation. (F, Sp, Su)		Prerequisite: MTEC 120 2.0 minimum Recommended: Basic Computer Skills An advanced audio production course providing audio theory and production practice. Topics include tape editing of musical material, use of audio effects in production, additional production mixing, and audio post-production for video. Students learn to edit and mix using ProTools. An extensive survey of the audio production industry is included. (F, Sp)	
MTEC - Media Technology			
MTEC 110 Intro Broadcast/Elec Media	4	MTEC 221 Audio Recording II	4
Prerequisite: Reading Level 5 and Writing Level 6 MTEC 110 is a beginning level survey course which examines the electronic media and the historical, technological, regulatory, economic, programming, and societal contexts in which they exist. (F, Sp, Su)		Prerequisite: MTEC 121 2.5 minimum Recommended: Basic Computer Skills A second course in audio recording that covers advanced techniques used in multitrack studio recording. Emphasis is on use of the multitrack studio and signal processing equipment for multitrack mixdown as well as advanced location recording techniques. (Sp)	
MTEC 120 Audio Production I	4	MTEC 223 Sound Reinforcement Practicum	2
Prerequisite: Reading Level 5 and Writing Level 6 Recommended: Basic Computer Skills A beginning course which covers the basics of audio theory and production techniques. Included are topics in microphone selection and use, analog and digital audio formats, analog and digital audio editing, interconnection and signal flow, loudspeakers, and audio mixing. This class provides the foundational theory for the other classes in the audio series, including production, recording, and sound reinforcement. (F, Sp, Su)		Prerequisite: MTEC 122 2.5 minimum and Department Approval A hands-on class that permits students to apply the theory and practice acquired in MTEC 122 to a large-scale practical project. The summer class reinforces the bands that play at Riverfront Park on July 4th, while the spring class reinforces musical theatre. (Su)	

<p>MTEC 230 Radio Production II 4 Prerequisite: MTEC 130 2.0 minimum Recommended: Basic Computer Skills Presentation of advanced studio and remote-production techniques. Emphasis on writing, producing, and performing for commercials, news, and sports programs. (F, Sp)</p> <p>MTEC 232 Radio Workshop 2 Prerequisite: MTEC 130 2.0 minimum and Department Approval Recommended: Basic Public Speaking Skills or SPCH 120 An opportunity for practical experience through access to the campus radio facility. Students work in a variety of station staff positions. Emphasis will be placed on developing media of a professional caliber that students can later use as portfolio or resume materials. (F, Sp, Su)</p> <p>MTEC 240 Script/Copywriting for Media 3 Prerequisite: MTEC 110 2.0 minimum and WRIT 121 2.0 minimum Recommended: Basic Computer Skills Develop basic writing skills used in preparing script materials for electronic media. Emphasis placed on practical copywriting techniques applicable to radio and television advertising, promotion, public service and news. (Sp)</p> <p>MTEC 243 Ethics/Social Impact of Media 3 Prerequisite: MTEC 110 2.0 minimum and WRIT 121 2.0 minimum Recommended: Basic Computer Skills This course explores the effects of the mass media on American culture and society. Topics such as privacy, censorship, violence, and portrayals of minorities and women are discussed. These discussions take place within an ethical reasoning framework. (F, Sp, Su)</p> <p>MTEC 250 TV Production II 4 Prerequisite: MTEC 150 2.0 minimum Recommended: Basic Computer Skills and MTEC 151 An advanced production course focusing on the development of the technical and creative skills necessary to direct the work of a studio production team. Production assignments are modeled after activities found in broadcast production environments. Additional academic exercises include interpretation and translation of script ideas into effective video programming. (Sp)</p> <p>MTEC 251 Advanced Field Production 4 Prerequisite: MTEC 151 2.0 minimum or (MTEC 152 2.0 minimum and MTEC 153 2.0 minimum) or IMAG 118 2.0 minimum and Reading Level 5 and Writing Level 6 Recommended: Basic Computer Skills An advanced production course designed to provide the student with high-level instruction in videography and electronic editing techniques. Class sessions contain instructional and critical analysis exercises of contemporary video programming. All production exercises are conducted outside of classroom sessions. Course assignments are evaluated on technical and artistic guidelines. (F)</p> <p>MTEC 252 Lighting for Television/Video 3 Prerequisite: (MTEC 150 2.0 minimum or THEA 111 2.0 minimum or IMAG 118 2.0 minimum) and Reading Level 5 and Writing Level 6 Recommended: MTEC 151 An advanced instructional seminar on lighting techniques for video and television production. Special emphasis is placed on developing creative and technical lighting approaches applicable to a broad range of program subjects. In-class examples and assignments are used for developing individual lighting techniques. (Sp)</p> <p>MTEC 254 Electronic Presentat Graphics 3 Prerequisite: MTEC 150 2.0 minimum Recommended: Basic Computer Skills This course is designed to provide the student with an introductory experience to the process of electronic graphic design for television, video, and multimedia production. Electronic Presentation Graphics places emphasis on learning the basics of several different types of graphic software, as well as developing the student's visual design capabilities in support of both television and video communication. (Sp)</p> <p>MTEC 255 Video Workshop 2 Prerequisite: MTEC 151 2.0 minimum and Department Approval Recommended: Basic Computer Skills This course provides guided laboratory and practical production experience in the creation of professional video programming. Projects will include opportunities to work in a variety of production and post-production positions during the semester. Emphasis will be placed on developing course materials of a professional caliber that students can later use as portfolio or resume materials. (F, Sp, Su)</p>	<p>MTEC 285 Media Portfolio 2 Prerequisite: Department Approval Restriction: Media Technology Majors The student will assemble a portfolio under faculty supervision that represents the student's attainment of program outcomes and that can also serve as a tool for the purpose of securing employment or acceptance into a four-year school. This course is intended to be a final course in Media Technology. (Sp)</p> <p>MTEC 290 Guided Independent Study 1-4 Prerequisite: MTEC 110 2.0 minimum and MTEC 120 2.0 minimum and MTEC 130 2.0 minimum and MTEC 150 2.0 minimum and Department Approval Restriction: Media Technology Majors Recommended: 75% of the way through Media Technology Program An opportunity for self-directed learners to explore topics of particular interest more thoroughly. Students will meet intermittently throughout the semester with an assigned faculty member for guidance and evaluation of progress. A proposal detailing the area of independent investigation must be submitted by the student prior to registration. (F, Sp, Su)</p> <p>MTEC 295 Media Practicum 3 Prerequisite: MTEC 110 2.0 minimum and MTEC 120 2.0 minimum and MTEC 130 2.0 minimum and MTEC 150 2.0 minimum and Department Approval Restriction: Media Technology Majors Recommended: 75% of the way through Media Technology Program An opportunity to gain practical production experience in the media. Students are assigned to work on various audio, video, radio, and television projects within the Media Services Department. Faculty guidance and evaluation are an integral part of the experience. Practicum is intended only for advanced media technology students. (F, Sp, Su)</p> <p>MTEC 296 Media Internship 3 Prerequisite: MTEC 110 2.0 minimum and MTEC 120 2.0 minimum and MTEC 130 2.0 minimum and MTEC 150 2.0 minimum and Department Approval Restriction: Media Technology Majors Recommended: 75% of the way through Media Technology Program An opportunity for students to work in external media settings under professional supervision. Students work closely with faculty in arranging and evaluating the workplace experience. Interview results determine intern placement. The internship is intended only for media technology majors who have completed at least 75 percent of their academic program. (F, Sp, Su)</p> <p>MTEC 298 Special Projects 1-4 Prerequisite: MTEC 110 2.0 minimum and MTEC 120 2.0 minimum and MTEC 130 2.0 minimum and MTEC 150 2.0 minimum and Department Approval Restriction: Media Technology Majors Recommended: 75% of the way through Media Technology Program An opportunity for a group of learners to become involved in a common project that will allow each to develop additional skills or to hone present skills. Availability of academically appropriate projects and student interest determines the nature of the experience. (F, Sp, Su)</p>
MUSC - Music	
<p>MUSC 100 Summer Chorus .5 Prerequisite: None Recommended: Music Reading Skills An ensemble of vocalists composed of students and community members, which develops general musicianship and provides training in choral singing. This group performs at least one concert during summer semester. Students are required to attend live performances. May be taken up to six semesters for credit. (Su)</p> <p>MUSC 101 Lanswingers Vocal Ensemble 1 Prerequisite: Vocal Audition - Lanswingers Recommended: Music Reading Skills The purpose of LanSwingers, a vocal jazz ensemble, is to develop artistic and creative vocal jazz skills for ensemble performance. Advanced solo experience, microphone techniques, and vocal improvisational skills will be developed. Students are required to attend live performances. May be taken up to six semesters for credit. (F, Sp)</p>	

MUSC 102 Women's Chorus 1	MUSC 143 Beginning Piano I - Summer 5
Prerequisite: None	Prerequisite: None
Recommended: Music Reading Skills	Course assumes no prior music experience or knowledge. Students are introduced to the rudiments of playing piano. Concepts such as staff notation, rhythmic notation, correct fingering/hand positions, major scales, and primary chords will be the focus for this course. May be taken up to three semesters for credit. (Su)
An ensemble of women vocalists composed of students and community members, which develops general musicianship and provides training in choral singing. This group performs four to six concerts throughout the year. Students are required to attend live performances. May be taken up to six semesters for credit. (F, Sp)	
MUSC 103 Men's Ensemble 1	MUSC 144 Beginning Piano I 2
Prerequisite: None	Prerequisite: Reading Level 3 and Writing Level 2
Recommended: Music Reading Skills	Course assumes no prior music experience or knowledge. Students are introduced to the rudiments of playing piano. Concepts such as staff notation, rhythmic notation, correct fingering/hand positions, major scales, and primary chords will be the focus for this course. May be taken up to three semesters for credit. (F, Sp)
An ensemble of male vocalists which develops general musicianship and provides training in choral singing. This group performs two to three concerts each semester. Men's Ensemble may be taken up to six semesters for credit. (F, Sp)	
MUSC 105 Private Lesson I 1	MUSC 145 Beginning Piano II 2
Prerequisite: None	Prerequisite: MUSC 144 2.0 minimum and Reading Level 3 and Writing Level 2
Restriction: Music, Dance and Theatre Majors	This course is designed to take the student up to an intermediate level of playing. Rhythmic subdivisions, more complex fingering, and new major and minor keys are introduced. Students are required to attend live performances. May be taken up to three semesters for credit. (F, Sp)
This course is a private lesson, 40 minutes per week, for performing arts majors. Only music, dance, or theatre majors are eligible to enroll. This course may be taken up to six semesters for credit. (F, Sp, Su)	
MUSC 105 Private Lesson II 2	MUSC 154 Class Voice Commercial I-Summr 1
Prerequisite: None	Prerequisite: None
Restriction: Music, Dance and Theatre Majors	Beginning course designed to introduce students to vocal techniques and performance skills required in singing/performing commercial music. Breathing, posture, diction, tone production, interpretive skills, and microphone techniques are presented and developed. Students are required to attend live performances. May be taken up to three semesters for credit. (Su)
This course is a private lesson, 60 minutes per week, for performing arts students. Only music, dance, or theatre majors are eligible to enroll. This course may be taken up to six semesters for credit. (F, Sp, Su)	
MUSC 108 Concert Choir 1	MUSC 155 Class Voice Commercial I 2
Prerequisite: None	Prerequisite: None
Recommended: Music Reading Skills	Beginning course designed to introduce students to vocal techniques and performance skills required in singing/performing commercial music. Breathing, posture, diction, tone production, interpretive skills, and microphone techniques are presented and developed. Students are required to attend live performances. May be taken up to three semesters for credit. (F, Sp)
A group of singers who perform a wide range of music, sacred and secular. This group performs four to six concerts throughout the year. Students are required to attend live performances. May be taken up to six semesters for credit toward a degree. (F, Sp)	
MUSC 119 Lansing Concert Band 1	MUSC 156 Class Voice Commercial II 2
Prerequisite: Instrumental Audition - Lansing Concert Band	Prerequisite: MUSC 155 2.0 minimum
A community band serving as the official band of the City of Lansing. The group performs throughout the year and plays all types of music but primarily concentrates on traditional concert band literature. Students are required to play in public performances of the band. May be taken up to six semesters for credit. (F, Sp, Su)	The advanced course in a series of two, this course will refine techniques introduced in MUSC 155. Students will prepare a final public performance. Students are required to attend live performances. May be taken up to three semesters for credit. (F, Sp)
MUSC 121 Percussion Ensemble 1	MUSC 157 Applied Lesson I 2
Prerequisite: Instrumental Audition - Percussion	Prerequisite: Music Major Audition
Recommended: Music Reading Skills	Restriction: Music Majors
The percussion ensemble rehearses and performs pieces in a variety of styles and periods. Rhythmic reading skills and percussion techniques will be honed and developed further. This ensemble performs two to four times per year. The course may be taken up to six semesters for credit. (F, Sp)	This course is a private lesson, 60 minutes per week, for music majors. Enrollment is by audition only. Auditions are held the Friday prior to Fall Semester or as requested during Fall and Spring Semester juries. The course may be taken up to three semesters for credit. (F, Sp, Su)
MUSC 123 Jazz Ensemble 1	MUSC 158 Applied Lesson II 2
Prerequisite: Jazz Ensemble Audition	Prerequisite: MUSC 157 2.0 minimum or Music Major Audition
Recommended: Music Reading Skills	Restriction: Music Majors
The jazz ensemble will rehearse and perform pieces of various styles and from various periods in jazz and big band sound. Improvisational skills will be taught and developed. The group performs two to four concerts throughout the year. Students are required to attend live performances. May be taken up to six semesters for credit. (F, Sp)	This course is a private lesson, 60 minutes per week, for music majors. Enrollment is allowed upon successful completion of the MUSC 157 juried performance. This course may be taken up to three semesters for credit. (F, Sp, Su)
MUSC 138 Class Piano Major I 2	MUSC 163 Aural Skills I 1
Prerequisite: Reading Level 5 and Writing Level 4	Prerequisite: None
Restriction: Music Majors	Co-Requisite Course: MUSC 193
The first in a series of two, this course is designed to develop the practical keyboard skills used in a music career. Students will gain keyboard facility, skill in sight-reading, and the ability to transpose. This series does not teach classical piano performance. MUSC 138 will cover all major scales. Students are required to attend live performances. (F)	This course allows students to develop their aural capacity through exercises in beginning melodic and rhythmic dictation. The ability to sing melodies on sight through the use of solfeggio will also be developed. This is the first of two courses in freshman aural skills. (Sp)
MUSC 139 Class Piano Major II 2	MUSC 164 Aural Skills II 1
Prerequisite: MUSC 138 2.0 minimum and Reading Level 5 and Writing Level 4	Prerequisite: MUSC 163 2.0 minimum
Restriction: Music Majors	Co-Requisite Course: MUSC 194
Last in a series, this course will increase technical facility through playing more advanced compositions and minor scales in all forms. Students will gain skill in accompanying a melody using a variety of patterns. Students will learn to read open score and lead sheets using letter and numeral notation. (Sp)	This course allows students to develop their aural skills through intermediate exercises in melodic and rhythmic dictation. The ability to sightsing melodies through the use of solfeggio continue to be developed. This course is the second in a sequence of two freshman music major requirements. (F)

- MUSC 168 Intro to Musicianship I** 2
Prerequisite: None
 This course is for beginning musicians to gain an understanding of notating and reading pitch, rhythm, and music terminology and theory. Students are introduced to musical scales, key signatures, intervals, and chords. Students are required to attend live performances. (F, Sp)
- MUSC 169 Intro to Musicianship II** 2
Prerequisite: MUSC 168 2.0 minimum or Music Theory Placement Test
 This course is the second in a pair of courses for novice musicians to further their understanding of music notation and theory fundamentals. MUSC 169 builds on material covered in MUSC 168. Students will learn to construct melodies, create phrases, and to harmonize a given or original melody. Students are required to attend live performances. (F, Sp)
- MUSC 179 Class Voice Major I** 1
Prerequisite: WRIT 121 2.0 minimum or (Reading Level 5 and Writing Level 6)
Restriction: Music Majors
 This course is designed to train singers in the International Phonetic Alphabet, assisting them in the pronunciation of English and foreign languages. This course focuses on English and Italian IPA skills, using the literature of major composers from the United States, Great Britain, and Italy with historical and performance emphasis. Students are required to attend live performances. (F)
- MUSC 180 Class Voice Major II** 1
Prerequisite: MUSC 179 2.0 minimum and (WRIT 121 2.0 minimum or Reading Level 5 and Writing Level 6)
Restriction: Music Majors
 This course continues to train singers in the use of the International Phonetic Alphabet. Focus is on the German and French languages, with a historical and performance emphasis. These language skills will be utilized in performing the literature of the major composers of German lieder and French chanson. Students are required to attend live performances. (Sp)
- MUSC 181 Class Voice I - Summer** .5
Prerequisite: None
 The first in a series of two courses for group and individual work on varied song literature. Emphasis is placed on vocal techniques such as breathing, posture, diction, tone production, and stage presence. Students are required to attend live performances. May be taken up to three semesters for credit. (Su)
- MUSC 182 Class Voice I** 1
Prerequisite: None
 The first in a series of two courses for group and individual work on varied song literature. Emphasis is placed on vocal techniques such as breathing, posture, diction, tone production, and stage presence. Students are required to attend live performances. May be taken up to three semesters for credit. (F, Sp)
- MUSC 183 Class Voice II** 1
Prerequisite: MUSC 182 2.0 minimum
 The advanced course in a series of two. This course will refine techniques, such as breathing, posture, diction, tone production, and stage presence, introduced in MUSC 182. Students are required to attend live performances. May be taken up to three semesters for credit. (F, Sp)
- MUSC 187 Class Guitar - Summer** 1
Prerequisite: None
 This course is for beginners and experienced players who desire note-reading skills. Folk, blues, and classical guitar traditions are presented using basic plectrum technique. Beginning chord theory is introduced. Students will provide their own guitar, and attend live performances. (Su)
- MUSC 188 Class Guitar** 2
Prerequisite: None
 This course is for beginners and experienced players who desire note reading skills. Folk, blues, and classical guitar traditions are presented using basic plectrum technique. Beginning chord theory is introduced. Students will provide their own guitar, and attend live performances. The course may be taken up to four semesters for credit. (F, Sp)
- MUSC 193 Basic Musicianship I** 3
Prerequisite: (MUSC 168 2.0 minimum or Music Theory Placement Test) and Reading Level 5
Co-requisite Course: MUSC 163
 The first in a sequence of two courses in freshman music theory as required for four-year college music degrees. Notation and analysis of rhythm, pitch, intervals, scales, modes, keys, basic triads, their inversions, and fundamental rules of part-writing are among the many skills explored. (F)
- MUSC 194 Basic Musicianship II** 3
Prerequisite: (MUSC 193 2.0 minimum or Music Theory Placement Test) and Reading Level 5
Co-requisite Course: MUSC 164
 This course presents intermediate music theory principles including diatonic and chromatic harmony, four-part writing, counterpoint, basic music forms, and analysis. This course is second in a sequence of two. It serves as a freshman requirement for a four-year college music degree. (Sp)
- MUSC 199 Music Appreciation** 2
Prerequisite: Reading Level 5 and Writing Level 4
 Designed for non-music majors, this course develops well-informed, focused listening. Students are acquainted with representative composers, compositions, and musical characteristics of a variety of style periods from early music through 20th Century music. Students are required to attend live performances. (F, Sp, Su)
- MUSC 200 Music Fund for Elemen Teachers** 3
Prerequisite: None
Recommended: Music Reading Skills
 This course addresses the cognitive and performance music skills necessary for early childhood, elementary and special education majors. Successful teaching methods for singing and focused listening will be presented along with classroom performance on the piano and recorder. MUSC 200 may be taken as an elective. (F, Sp)
- MUSC 219 Introduction to Music Therapy** 3
Prerequisite: Reading Level 5 and Writing Level 4
 An overview of the history, philosophy, and methodologies and practices of Music Therapy and the use of music in therapeutic aims of restoring, maintaining and improving both mental and physical health. Exploration and assessment of various clinical techniques and the disorders/patient populations they address. Off-campus field experiences required. (F, Sp)
- MUSC 221 Sacred Music: History & Styles** 2
Prerequisite: Reading Level 5 and Writing Level 6
Recommended: Music Reading Skills
 Investigation of sacred musical traditions and styles with global, cultural, inter-denominational, and inclusive perspectives. Contextual overviews of liturgics, rites and diverse uses of music in worship are explored. Other issues encompass the plurality of world chant traditions, ethnicity, popular/contemporary music-making, and technology as significant forces in sacred music. (F)
- MUSC 222 Techniques in Sacred Music** 2
Prerequisite: Reading Level 5
Recommended: Music Reading Skills
 Techniques and skills for the practice of sacred music, including: principles of conducting; effective organization and administration of quality programs; appraisal of pertinent resources; planning worship services; and, fundamentals of recruiting, marketing and budgeting. Repertoires and training methods for various vocal/instrumental ensembles and soloists/cantors will also be addressed. (Sp)
- MUSC 230 Independent Study in Music** 1-2
Prerequisite: Department Approval
Restriction: Music Majors
 An opportunity for self-directed learners to explore topics related to, but not taught in the curriculum. Students spend at least two hours per week for each credit. A detailed proposal must be submitted by the student for approval by the Department and supervising instructor prior to registration. (F, Sp)
- MUSC 232 Music Seminar** 1
Prerequisite: Department Approval
 Student will be given the opportunity to attend master classes on various related topics or perform in a production on the main stage or comparable space. Limited to individuals who have been selected as cast members or approved for master class. (F, Sp, Su)
- MUSC 233 Music Seminar** 2
Prerequisite: Department Approval
 Student will be given the opportunity to attend master classes on various related topics or perform in a production on the main stage or comparable space. Limited to individuals who have been selected as cast members or approved for master class. (F, Sp, Su)

- MUSC 240 World Music History I** 4
Prerequisite: Reading Level 5 and Writing Level 6
Basic musical elements and the ways which civilizations/cultures use music will be introduced. This includes composers and musical characteristics of specific style periods starting with ancient civilizations of the world through the year 1600. Western and non-Western musics will be compared/contrasted in focus, content, and process. (F)
- MUSC 241 World Music History II** 4
Prerequisite: Reading Level 5 and Writing Level 6
Historical, stylistic and cultural survey of music from 1600 to the present. Characteristic genres, composers and their musical expressions are discussed in relation to developments in Western art music, popular musical traditions, comparisons with non-Western musical cultures, and the emergence of world musics in our modern times. (Sp)
- MUSC 242 American Musical Theatre** 2
Prerequisite: Reading Level 5 and Writing Level 4
Survey of the stylistic trends and developments in American Musical Theatre from its roots to the present with attention to musical, literary and dramatic forms. Stylistic, cultural and social perspectives of the repertory are explored through informed listening, multi-media lecture presentations, live performances and an active-learning environment. (F)
- MUSC 246 History of Blues and Jazz** 2
Prerequisite: Reading Level 5
An overview of the emergence, development and relevance of two of America's most genuine musical artforms. Stylistic, cultural, and sociological investigations of such musics provide a mirror to the ever-changing popular American soundscape. Informed listening introduces: major creator/performers, genres, expressions, and reflections of an increasingly global and technological musical world. (Sp)
- MUSC 247 History of Rock and Roll** 2
Prerequisite: Reading Level 5
Survey of the origins, elements, developments, and reflections of Rock and Roll from its roots in the 1920s to the present. Major trends and artists are considered in stylistic, social, commercial, and global perspectives. Informed listening and comparative analyses reveal complex issues continuously redefining Rock music and its cultural legacy. (F, Sp)
- MUSC 253 Business of Music** 3
Prerequisite: None
An introduction to the business aspects of the music industry. Areas covered include copyrights, contracts, trademarks, publishing, recording and record company operations, personal managers, booking agents, concert promotions, and unions. Students are required to attend live performances. (F)
- MUSC 254 Band Management** 2
Prerequisite: None
This course is designed to assist the professional musician or manager in creating or improving a performing band. All major aspects of band management are covered, including intra-band arrangements, contracts, negotiations, format and material choice, equipment, finances, promotion and sales, road management, and basic organizational information. Students are required to attend live performances. (Sp)
- MUSC 257 Applied Lesson III** 2
Prerequisite: MUSC 158 2.0 minimum or Music Major Audition
Restriction: Music Majors
This course is a private lesson, 60 minutes per week, for music majors. Enrollment is allowed upon successful completion of the MUSC 158 juried performance. This course may be taken up to three semesters for credit. (F, Sp, Su)
- MUSC 258 Applied Lesson IV** 2
Prerequisite: MUSC 257 2.0 minimum or Music Major Audition
Restriction: Music Majors
This course is a private lesson, 60 minutes per week, for music majors. Enrollment is allowed upon completion of the MUSC 257 juried performance. This course may be taken up to three semesters for credit. (F, Sp, Su)
- MUSC 263 Aural Skills III** 1
Prerequisite: MUSC 164 2.0 minimum
Co-Requisite Course: MUSC 293
This course is a continuation of the first year of aural skills training. The student will proceed to more advanced training in sight-singing and ear-training. This course is the first in a sequence of two sophomore level aural skills courses. (F)
- MUSC 264 Aural Skills IV** 1
Prerequisite: MUSC 263 2.0 minimum
Co-Requisite Course: MUSC 294
Advanced training in aural skills will continue as this course is the second in a sequence of two sophomore aural skills courses. Melodic and harmonic dictation involving chromaticism and modulation will be studied, as well as more advanced sight-singing exercises. (Sp)
- MUSC 270 Rock Guitar** 1
Prerequisite: None
A presentation on fundamental rhythm and lead guitar techniques and music theory concepts applicable to rock music from its rhythm and blues origin to the present, as well as other related popular styles. Student must provide own guitar. Students required to attend live performances. May be taken up to three semesters for credit. (F, Sp, Su)
- MUSC 276 Lyric Writing** 2
Prerequisite: Reading Level 5 and Writing Level 4
This course introduces students to the craft of writing song lyrics. The work of professional songwriters as well as the students' work will be examined and discussed. Students are required to attend live performances. (F)
- MUSC 280 Private Composition** 1
Prerequisite: Music Major Audition
Restriction: Music Majors
Private coaching/instruction for music majors, 40 minutes per week, in musical composition, giving attention and suggestion to melody, harmony, chord substitution, and formal design. Students are required to attend live performances. May be taken up to six semesters for credit. (F, Su)
- MUSC 293 Advanced Musicianship I** 3
Prerequisite: MUSC 194 2.0 minimum and Reading Level 5
Co-requisite Course: MUSC 263
This course is a continuation of elements of music theory acquired in MUSC 193 and 194. Students will learn advanced elements of harmony such as modulation, Phrygian II chords, augmented sixth chords, and chromatic voice leading techniques. Basic principles of musical form will be introduced. Students are required to attend live performances. (F)
- MUSC 294 Advanced Musicianship II** 3
Prerequisite: MUSC 293 2.0 minimum and Reading Level 5
Co-requisite Course: MUSC 264
MUSC 294 concerns the study of major classical forms including: variation, sonata, rondo, and concerto forms. Counterpoint, 19th Century harmony, jazz, set theory, and twelve-tone theory will be studied. This is the second of two sophomore level music theory courses. Students are required to attend live performances. (Sp)
- MUSC 297 Synthesizers & Computer Music** 2
Prerequisite: None
Recommended: Music Reading Skills
This course introduces students to the role of computers in the music discipline. Topics include basic IBM and Macintosh personal computer skills, a thorough exploration of MIDI, music sequencing software, music printing software, and orchestration with electronic/digital instruments. (F, Sp)

NURS - Nursing

- NURS 150 Fundamentals in Nursing Care** 9
Prerequisite: Admission to Nursing Program and Reading Level 5 and Writing Level 6
The focus of this course is the nursing process as a problem-solving technique for meeting basic human needs. The concepts of perioperative care and cancer are presented, and the aging process is emphasized throughout. Clinicals are in nursing homes, extended care facilities, and hospitals. (F, Sp)
- NURS 160 Acute Nursing Care** 6
Prerequisite: NURS 150 2.5 minimum and NURS 200 2.5 minimum and BIOL 202 2.5 minimum (previously PHGY 202) and (PSYC 205 2.5 minimum or Concurrently)
Co-requisite Course: NURS 165
Students are assisted in using the nursing process in the care of adults adapting to common acute health problems. Pathophysiology and nursing interventions affecting the cardiovascular, respiratory, endocrine, gastrointestinal, neurological, and musculoskeletal body systems are presented. Clinical in acute care hospital systems. (F, Sp)

NURS 165 Maternity Nursing Care 5

Prerequisite: NURS 150 2.5 minimum and NURS 200 2.5 minimum and BIOL 202 2.5 minimum (previously PHGY 202) and (PSYC 205 2.5 minimum or Concurrently)

Co-requisite Course: NURS 160

Assessment and nursing care of the childbearing family is the focus of this course. Concepts of family, therapeutic communication, cultural diversity, and human sexuality are discussed. Basic needs and developmental tasks of early childhood through adolescence are included. Clinicals are in maternity units of hospitals and in community settings. (F, Sp)

NURS 200 Pharmacology 3

Prerequisite: BIOL 202 2.5 minimum (previously PHGY 202) or Concurrently
 This course is recommended for students who wish to transfer to a BSN program. Drug categories are discussed in-depth as well as nursing responsibilities associated with medication administration. Students are expected to calculate drug dosages. (F, Sp, Su)

NURS 210 LPN-RN Transition 2

Prerequisite: Department Approval and Reading Level 5 and Writing Level 6
Recommended: Current Work Experience and Current BCLS and OSHA
 Introduces the returning licensed practical nurse (LPN) to the nursing process, patient records, role transition, and curriculum concepts. Assessment and evaluation of nursing skills will be done. (F, Sp, Su)

NURS 260 Mental Health Nursing Care 5

Prerequisite: NURS 160 2.5 minimum and NURS 165 2.5 minimum and PSYC 205 2.5 minimum

Co-requisite Course: NURS 265

The student is expected to use the nursing process in caring for clients adapting to psychosocial health problems including the high risk mother and infant. Emphasis is placed on therapeutic communication skills. Clinicals are in psychiatric and maternal units of acute care hospitals and day treatment facilities and community sites. (F, Sp)

NURS 265 Pediatric Nursing Care 5

Prerequisite: NURS 160 2.5 minimum and NURS 165 2.5 minimum and PSYC 205 2.5 minimum

Co-requisite Course: NURS 260

Concepts of illness in children are discussed utilizing a systems perspective. Students are expected to integrate the nursing process and course concepts into their care of children in hospital acute care maternity units, pediatric units, and other selected health care settings. (F, Sp)

NURS 280 Advanced Chronic Nursing Care 4

Prerequisite: MICR 203 2.5 minimum and NURS 260 2.5 minimum and NURS 265 2.5 minimum

Co-requisite Courses: NURS 285 and NURS 290

Recommended: MICR 204

The student will use the nursing process in caring for adult clients adapting to chronic health problems. Client adaptation to chronic illness, selected neurological and immune system problems, cancer, AIDS, and care of the dying client is discussed. Clinical experiences in nursing homes, home health care agencies, and selected community facilities. (F, Sp)

NURS 285 Advanced Acute Nursing Care 4

Prerequisite: MICR 203 2.5 minimum and NURS 260 2.5 minimum and NURS 265 2.5 minimum

Co-requisite Courses: NURS 280 and NURS 290

The student will use the nursing process in caring for adult clients adapting to critical health problems. Homeostatic changes in the neurological, cardiovascular, and respiratory systems is discussed, as well as fluid-electrolyte and acid-base imbalance. Clinical experiences are in acute care hospitals. (F, Sp)

NURS 290 Leadership in Nursing Care 3

Prerequisite: MICR 203 2.5 minimum and NURS 260 2.5 minimum and NURS 265 2.5 minimum

Co-requisite Courses: NURS 280 and NURS 285

The role of the nurse as manager of care and the role of the associate degree nurse within the discipline of nursing are presented. Students are expected to use the nursing process with various management systems within a health care system. Clinicals in acute care hospitals and nursing homes. (F, Sp)

OADM - Office Administration

OADM 102 Editing Business Documents 2

Prerequisite: None

Recommended: WRIT 114 or Proficiency in English Grammar and Mechanics
 This course teaches office personnel applied editing skills for business documents and emphasizes locating and correcting errors in typing, word division, format, numbers, word usage, capitalization, and punctuation. Grammar rules will be reviewed as needed. Classroom activities may require completion of some exercises in one of the computer labs. (F, Sp, Su)

OADM 110 Machine Transcription 3

Prerequisite: None

Recommended: (CABS 105 or CABS 113) and WRIT 114
 This course is designed for the production of mailable communications by using transcribers, recorded cassettes, and an IBM PC with word processing software. Proficiency in spelling, punctuation, grammar, and business vocabulary is emphasized. (F)

OADM 195 Human Behavior in Work Place 3

Prerequisite: None

This course emphasizes the importance of the skill of human relations in the work-place. Through a combination of case studies, self-analysis exercises and discussion, students become more aware of the impact of positive interactions at work. Proficiency in enhancing good human relations and in handling difficult situations is stressed. (F, Sp, Su)

OADM 197 Medical Vocabulary 3

Prerequisite: Reading Level 3

This course provides a medical language foundation that students need for jobs in the healthcare industry. Emphasis includes spelling, definition structure, and concepts of medical terminology using a body-systems approach. Anatomy, physiology, pathology, and diagnostic terms are presented within a framework of infant-to-seniors health care. Requires good study skills. (F, Sp)

OADM 198 Health Information Management 3

Prerequisite: None

Recommended: OADM 197 or Equivalent

This course is a study of the diverse settings of health information management. Topics include coding and classification, computerized information systems in health care, quality assurance and utilization management, risk management and legal issues. Developments in telemedicine, health informatics, and other new trends will be introduced. (Sp)

OADM 200 Critical Thinking 3

Prerequisite: None

Critical thinking is designed to provide basic and higher-order thinking skills including reasoning, creative thinking, decision-making, and problem solving. Emphasis is placed on gaining proficiency in critical awareness to enable students to confidently appraise and discriminate information, problems, issues, etc., whether in a societal, educational, or organizational setting. (F, Sp)

OADM 203 Professional Office Procedures 2

Prerequisite: None

The topics of this course include telephone techniques, handling incoming and outgoing mail, preparing office documents such as minutes and reports, planning meetings and travel arrangements, interviewing and other employment related topics. Computer/Internet usage will be included in class assignments. (F, Sp)

OADM 206 Legal Vocabulary and Form Prep 3

Prerequisite: None

Recommended: Word Processing Experience

This course utilizes basic legal terminology in general and specialized areas of law. It defines legal terms and their use in legal context and stresses forms preparation. (Sp)

OADM 207 Medical Transcription 3

Prerequisite: None

Recommended: (OADM 197 or CHSE 121) and (ANAT 145 or ANAT 151) and Typing Experience

This course is designed to develop skill in defining and transcribing medical reports with the use of transcriber and microcomputer. Emphasis is on development of accuracy and knowledge of medical terminology for the transcription of medical reports. (F, Sp)

OADM 215 Records and Info Management I 3**Prerequisite:** None

Presents an overview of records management and how control over documents is maintained at each stage of the records cycle from creation to disposition; complete coverage of all records methods and indexing rules for alphabetic, subject, geographic, and numeric; selection of proper equipment; computer applications modules using various database applications; procedures for control of an automated records technology in a systems environment. (F, Sp, Su)

OADM 216 Records and Info Management II 4**Prerequisite:** None**Recommended:** OADM 215

This course provides an in-depth study including the essentials of establishing and/or evaluating an existing records management program from preparing an inventory, developing a retention schedule, developing a disaster recovery plan for records to long term archival storage for electronic as well as paper media; managing, analyzing, designing paper and electronic forms; micrographic and optical disk systems in use; emphasis is placed on use of records management software and database management. (Sp)

OADM 220 Administrative Office Mgmt 4**Prerequisite:** Reading Level 5 and Writing Level 6

This course emphasizes the principles of office management for an ever-changing, culturally diverse staff. Topics deal with managing and controlling administrative services in a workplace including office functions, job analysis, ergonomic planning, designing, installing, and evaluating improvements in office systems. (F, Sp)

OADM 222 Advanced Medical Transcription 3**Prerequisite:** OADM 207 2.0 minimum

This course is designed to equip students with entry-level medical transcription skills. This course incorporates advanced medical terminology and actual physician dictation from a wide variety of medical specialties. (Sp)

OADM 228 Financial Mgmt in Health Care 3**Prerequisite:** None

This course focuses on the concepts of managed care and the significant role it plays in the changes underway in the health care system. It deals exclusively with the health care sector, emphasizing managed care and its impact on financial management, decision making, and the information requirements of the health care system. Students will have an opportunity to view managed care, including ambulatory care, from the perspective of both health plans and providers. (F)

OADM 240 Office Internship 3**Prerequisite:** None**Recommended:** See Internship Coordinator Before Registering

This course is designed to provide on-the-job training relating to an office administration major. Placement is made in an approved training station to earn credits for satisfactory work performance and to earn wages for work performed. Volunteer work may be substituted for earning wages. Minimum of 180 hours work is required. (F, Sp, Su)

OADM 275 Cultural Differences in Busn 3**Prerequisite:** Reading Level 5 and Writing Level 4

This course is designed to help students become familiar with, understand, and appreciate people from different cultures to promote a more effective basis for working together in the business world. Emphasis and application is placed upon business etiquette and business practices as they differ in various cultures. (F, Sp)

PARA - Paramedic**PARA 221 Paramedic Medical Trauma I** 5**Prerequisite:** Admission to Paramedic Program and Reading Level 5 and Writing Level 6 and Math Level 3

Co-requisite Courses: PARA 231 and PARA 241 and PARA 251 and PARA 261
This course provides information about the prehospital management of medical and traumatic conditions at the advanced life support level. Emphasis is placed on pathophysiology, recognition of signs and symptoms, review of basic life support management techniques and strategies for advanced life support care. (F)

PARA 222 Paramedic Medical Trauma II 5**Prerequisite:** PARA 221 3.0 minimum**Co-requisite Courses:** PARA 232 and PARA 242 and PARA 252 and PARA 262 and PARA 263

PARA 222 incorporates previous knowledge gained at the Basic EMT level and PARA 221. Provides theoretical background material for management of prehospital emergencies including assessment and management of neurological, behavioral, abdominal, metabolic, geriatric, and multiple trauma patients. The principles of triage, management of mass casualty incidents, and telecommunications are also included. (Sp)

PARA 231 Paramedic Cardiology I 3**Prerequisite:** Admission to Paramedic Program**Co-requisite Courses:** PARA 221 and PARA 241 and PARA 251 and PARA 261

This course provides the paramedic student with information about cardiovascular anatomy, physiology, and electrophysiology. Emphasis is placed on rhythm interpretation, recognition of life threatening arrhythmias, electrical intervention and other prehospital patient management strategies. (F)

PARA 232 Paramedic Cardiology II 3**Prerequisite:** PARA 231 3.0 minimum**Co-requisite Courses:** PARA 222 and PARA 242 and PARA 252 and PARA 262 and PARA 263

Builds on information learned in PARA 231 as a basis for more advanced arrhythmia interpretation. Management of cardiac arrest including medications, cardioversion, transcutaneous pacing, and defibrillation will be a major emphasis. Pacemakers, 12-lead ECG interpretation, and other advanced procedures, and arrhythmias will be presented. Application of theory, judgment, and decision-making strategies are evaluated. (Sp)

PARA 241 Paramedic Pharmacology I 3**Prerequisite:** Admission to Paramedic Program

Co-requisite Courses: PARA 221 and PARA 231 and PARA 251 and PARA 261
Provides the student with information necessary for the preparation, calculation of doses, and administration of drugs used in the prehospital setting, including classification, action, use, and side effects. Information about other commonly prescribed drugs is also provided. (F)

PARA 242 Paramedic Pharmacology II 3**Prerequisite:** PARA 241 3.0 minimum**Co-requisite Courses:** PARA 222 and PARA 232 and PARA 252 and PARA 262 and PARA 263

Provides the paramedic student with additional in-depth information on Advanced Cardiac Life Support drugs, including classification, action, use, and side effects. Information about other commonly used of prescribed drugs is also provided. (Sp)

PARA 251 Paramedic Skills I 2**Prerequisite:** Admission to Paramedic Program

Co-requisite Courses: PARA 221 and PARA 231 and PARA 241 and PARA 261
Provides introduction of paramedic skills required for advanced life support and provides the opportunity to apply theory to field practice in a discussion and skills lab setting. Skills will be demonstrated, practiced during supervised labs, and tested for competency. The student must have excellent basic EMT skills upon entry. (F)

PARA 252 Paramedic Skills II 2**Prerequisite:** PARA 251 3.0 minimum**Co-requisite Courses:** PARA 222 and PARA 232 and PARA 242 and PARA 262 and PARA 263

A continuation of Skills I with the introduction of additional skills and continued application of theory. Measurement criteria for Skills I competencies becomes more stringent and students must become competent in all paramedic skills in preparation for the field internship component. (Sp)

PARA 261 Paramedic Clinical I 3**Prerequisite:** Admission to Paramedic Program

Co-requisite Courses: PARA 221 and PARA 231 and PARA 241 and PARA 251
Provides clinical experience for paramedic students in areas including nursing home; hospital units such as the emergency department, critical care units, burn units, obstetrics, pediatrics and psychiatric units. Students are also evaluated in the management of simulated emergencies; and designated EMS agencies under the supervision of licensed paramedics. (F)

PARA 262 Paramedic Clinical II 4
Prerequisite: PARA 261 3.0 minimum
Co-requisite Courses: PARA 222 and PARA 232 and PARA 242 and PARA 252 and PARA 263
 Provides clinical experience for paramedic students in areas including hospital units such as emergency department, critical care units, obstetrics, pediatrics, surgery and designated EMS agencies under the supervision of licensed paramedics. Students are also evaluated in the management of simulated emergencies. (Sp)

PARA 263 Paramedic Internship 3
Prerequisite: PARA 221 3.0 minimum and PARA 231 3.0 minimum and PARA 241 3.0 minimum and PARA 251 3.0 minimum and PARA 261 3.0 minimum
Co-requisite Courses: PARA 222 and PARA 232 and PARA 242 and PARA 252 and PARA 262
 This course provides a field internship component with an advanced life support agency. Students are assigned to a Paramedic Training Officer to provide total patient care and other professional duties under direct supervision. Training and testing in advanced cardiac life support is also completed. (Sp)

PFAQ - Physical Fitness: Aquatics

PFAQ 100 Swimming: Primary Skills 1
Prerequisite: None
 This is an introductory swimming course which focuses on the development of basic swimming strokes, rhythmic breathing, survival swimming, and beginning diving skills. (F, Sp, Su)

PFAQ 101 Swimming: Stroke Development 1
Prerequisite: None
Recommended: PFAQ 100
 This course stresses development of skills in front crawl and backstroke. Students will be introduced to the backcrawl, breaststroke, and butterfly, with strong concentration on rhythmic breathing. (F, Sp, Su)

PFAQ 104 Swimming/Training 1
Prerequisite: None
 This course is designed for persons interested in skill development in all competitive swimming strokes as well as in a fitness program design. The student should be able to swim 500 yards in 10 minutes. (F, Sp, Su)

PFAQ 105 Advanced Swimming/Training 2
Prerequisite: None
Recommended: PFAQ 104
 This course is designed for the competitive swimmer seeking a high level of swimming. Advanced swimming/training incorporates some dry land training and waterpolo. (F, Sp)

PFAQ 106 Water Walking/Toning 1
Prerequisite: None
 This course utilizes a variety of walking and running moves in shallow or deep water to enhance cardiovascular fitness. Toning exercises for arms, abdominal, and thighs are used extensively. Non-ballistic moves are emphasized. (F, Sp, Su)

PFAQ 107 Water Exercise I 1
Prerequisite: None
 This course utilizes a variety of movements performed in shallow or deep water, to improve cardiovascular fitness and flexibility. No swimming skills required. (F, Sp, Su)

PFAQ 110 Hydro-Fit Exercise I 1
Prerequisite: None
 This course is designed to give the student an overall water fitness workout with little impact to joints or back. The class uses Hydro-Fit buoyancy equipment to tone and strengthen muscles, develop coordination, and increase flexibility. (F, Sp, Su)

PFAQ 111 Hydro-Fit Exercise II 2
Prerequisite: None
Recommended: PFAQ 110
 This is a water fitness program using water resistance to tone and strengthen muscles, develop coordination and increase flexibility by using Hydro-Fit exercise equipment. Emphasis is placed on increasing abdominal, shoulder, arm and lower body strength. (This class is similar to Hydro-Fit I, but meets three times per week.) (F, Sp, Su)

PFAQ 112 Scuba 2
Prerequisite: None
 This course is a basic course in scuba diving. The course includes both classroom and pool training instruction. Upon successful completion of class, the student is eligible for scuba certification following open water training. (F, Sp, Su)

PFAQ 114 Parent/Infant Water Adjustment .5
Prerequisite: None
 This course places emphasis on parent/infant water adjustment, safety, and fun. Emphasis is placed on development of water experience and improvement of motor skills and coordination. (Infant ages between 6 months to 2 years) (F, Sp)

PFAQ 115 Parent/Toddler Water Adjustmnt .5
Prerequisite: None
Recommended: PFAQ 114
 This course places emphasis on parent/toddler water adjustment, skill development, safety, and fun. Emphasis is on development of water experiences, improvement of motor development, coordination, and social skills. Toddlers should be 2 to 5 years old, depending upon skill development and/or instructor approval. (F, Sp)

PFAQ 116 Parent/Child Swim .5
Prerequisite: None
Recommended: PFAQ 115
 This course focuses on parent/child water skill development, socialization skills, and safety. Individualized instruction is given for advancement of motor skill and coordination in the aquatic environment. Children should be 4 to 5 years old and/or instructor's approval. (F, Sp)

PFAQ 118 Arthritis Aquatics 1
Prerequisite: None
 This course will give the student exercises for range of motion in comfortable water temperatures and will improve and help maintain flexibility and well-being. Arthritis Foundation approved program. (F, Sp)

PFAQ 119 Scuba Certification Class 1
Prerequisite: PFAQ 112 2.0 minimum or PFAF 112 2.0 minimum
 This course is designed to allow students who have completed scuba PFAQ 112 or equivalent to complete their open water scuba certification training. Upon successful completion of the class, the student will receive Scuba Schools Internationals' open water certification. (F, Sp, Su)

PFCW - Physical Fitness: Combative/Weight Training

PFCW 100 Fencing: Beginning 1
Prerequisite: None
 This course is designed to introduce the student to basic skills and theories in foil fencing. Course emphasis is placed on basic skills such as advance, retreat, lunge, disengage, coupe', one-two double', riposte, counter parry and riposte, and advance-lunge. Group instruction is used. (F, Sp)

PFCW 101 Fencing: Intermediate 1
Prerequisite: PFCW 100 2.0 minimum
 This course builds upon the basic foil fencing skills introduced in PFCW 100. It introduces the rules and complex fencing movements. Students will use acquired skills in fencing bouts. More emphasis will be placed on strategy and competition. Basic theory for all three weapons: foil, epee, and sabre are covered. (F, Sp)

PFCW 103 Judo: Beginning 1
Prerequisite: None
 This course is designed to familiarize students with basic Judo techniques of falling, throwing, and grappling. (F, Sp, Su)

PFCW 104 Judo: Intermediate 1
Prerequisite: None
Recommended: PFCW 103
 This course works toward a series of sequential Judo movements with continued emphasis on throwing and grappling. (F, Sp)

PFCW 105 Karate: Beginning 1
Prerequisite: None
 This course introduces the basic skills of karate: kicking with the feet and knees, and punching with the fist and hands. (F, Sp, Su)

PFCW 106 Karate: Intermediate 1
Prerequisite: None
Recommended: PFCW 105
 This course further develops karate skills in punching with the fists and hands, kicking with feet and knees, and essential body movement in combative activities with an emphasis on free sparring. (F, Sp, Su)

PFCW 107 Karate: Advanced 1
Prerequisite: None
Recommended: PFCW 105 or PFCW 106
 This course places primary emphasis on the development of sparring techniques as they relate to punching and kicking. Students spar and move toward the competitive aspect of karate as a martial art. (F, Sp, Su)

PFCW 108 Weight Training: Beginning 2
Prerequisite: None
 This course is designed to promote physical fitness through weight training. Instruction will include various methods and techniques for progressive resistance training. Students will design their own program with emphasis on weight reduction, muscle strengthening, and body building. (F, Sp, Su)

PFCW 109 Body Building: Introduction 1
Prerequisite: None
 This course is designed to introduce weight training and proper lifting techniques. Introduction to safety rules, proper use of machinery, and concepts of lifting will be emphasized. (F, Sp, Su)

PFCW 110 Body Building: Beginning 2
Prerequisite: None
 This course acquaints students with the beginning aspects of body structuring through the application of weights. Emphasis on weight reduction or increase in muscle size through an individualized training program is stressed. (F, Sp, Su)

PFCW 111 Body Building: Intermediate 2
Prerequisite: None
Recommended: PFCW 108 or PFCW 110
 This course expands the student's ability to use machines and free weights to increase variations and methods of lifting techniques. Students will also monitor food intake to provide information to assist with proper diet and nutritional needs. (Sp)

PFDA - Physical Fitness: Dance

PFDA 142 Ballroom Swing I 1
Prerequisite: None
 Introduction to the study of ballroom swing including partnership technique, dance posture, basic patterns, music and style of the Swing dances. Includes introduction to dances using different styles and speeds of music such as East Coast swing, West Coast swing, jitterbug, and jive. Enrollment with a partner is strongly recommended. (F, Sp, Su)

PFDA 147 Latin Ballroom I 1
Prerequisite: None
 This course includes an introduction to partnership technique, dance posture, basic patterns and music for Latin partnership dancing. Dances will be selected from the following: cha-cha, rumba, mambo, merengue, salsa, samba, and tango. Enrollment with a partner is strongly recommended. (F, Sp, Su)

PFDA 151 Ballroom Bronze I Workshop 1
Prerequisite: None
 Introduction to the study of ballroom including partnership technique, dance posture, basic patterns, and music for traditional ballroom dances including waltz, fox trot, cha-cha, rumba, and swing. Enrollment with a partner is strongly suggested. (F, Sp, Su)

PFDA 152 Latin Ballroom II 1
Prerequisite: None
Recommended: PFDA 147
 This course is designed to build on the techniques introduced in Latin Ballroom I, Ballroom I, Ballroom Swing I, or Ballroom Topics. Emphasis will be placed on the following dance styles: cha-cha, rumba, mambo, samba, salsa, merengue, and tango. Enrollment with a partner is strongly recommended. (F, Sp, Su)

PFDA 158 Line Dancing 1
Prerequisite: None
 Line dancing provides a fun way for students to learn basic steps and patterns to a variety of dances. The class consists of Western dances, Latin dances, and ballroom dance steps. Partner unnecessary. (F, Sp)

PFFT - Physical Fitness: Fitness

PFFT 100 Total Fitness A 2
Prerequisite: None
 Total Fitness encompasses fitness, nutritional health, and general wellness principles. Students will complete an assessment measuring aerobic fitness, strength, flexibility, and nutrition. With supervision of an instructor, students will develop and participate in an exercise plan tailored to their individual needs. The course features flexibility of attendance and modular teaching. (F, Sp, Su)

PFFT 101 Total Fitness B 2
Prerequisite: None
 Total Fitness encompasses fitness, nutritional health, and general wellness principles. Students will complete an assessment measuring aerobic fitness, strength, flexibility, and nutrition. With supervision of an instructor, students will develop and participate in an exercise plan tailored to their individual needs. The course features flexibility of attendance and modular teaching. (F, Sp, Su)

PFFT 102 Total Fitness C 2
Prerequisite: None
 Total Fitness encompasses fitness, nutritional health, and general wellness principles. Students will complete an assessment measuring aerobic fitness, strength, flexibility, and nutrition. With supervision of an instructor, students will develop and participate in an exercise plan tailored to their individual needs. The course features flexibility of attendance and modular teaching. (F, Sp, Su)

PFFT 103 Total Fitness D 2
Prerequisite: None
 Total Fitness encompasses fitness, nutritional health, and general wellness principles. Students will complete an assessment measuring aerobic fitness, strength, flexibility, and nutrition. With supervision of an instructor, students will develop and participate in an exercise plan tailored to their individual needs. The course features flexibility of attendance and modular teaching. (F, Sp, Su)

PFFT 105 Aerobic Walking 2
Prerequisite: None
 This course centers on improving one's fitness level through outdoor walking at an individually determined speed. Students will also develop a personalized healthy lifestyle plan which integrates exercise, diet, and stress management. (F, Sp)

PFFT 107 Jogging: Beginning 1
Prerequisite: None
 This course introduces jogging as a fitness modality and covers how to care for feet, proper equipment choices, clothing, and safety. (F, Sp, Su)

PFFT 111 Aerobic Boxing .5
Prerequisite: None
 This course will teach the art of self-defense while improving your aerobic and anaerobic capacity. (F, Sp, Su)

PFFT 112 Body Flexibility 1
Prerequisite: None
 This course is designed to increase body flexibility by learning proper stretching techniques and applying these techniques to range of motion and muscle flexibility. (F, Sp, Su)

PFFT 113 Tone and Stretch 1
Prerequisite: None
 This course combines calisthenics and stretching. Students will use floor exercises to tone muscles and increase flexibility. Proper stretching techniques will be emphasized. Students will examine which muscle groups are being worked. (F, Sp, Su)

PFFT 114 Advanced Circuit Training 2

Prerequisite: None
Co-requisite Courses: CJUS 260 and CJUS 261 and CJUS 262 and CJUS 263 and CJUS 264 and CJUS 265 and CJUS 266 and CJUS 267 and CJUS 268

This course is designed to incorporate strength conditioning, muscle endurance, flexibility, and cardiovascular training for a total body workout. This can be accomplished in a relatively short time frame by utilizing the circuit training method. (F, Sp, Su)

PFFT 120 Aerobic Exercise 2

Prerequisite: None
 This course helps students to improve cardiovascular function and oxygen efficiency to enhance muscle structure and function through toning exercises, aerobic dancing, and stretching. (F, Sp, Su)

PFFT 122 Dance Exercise 1

Prerequisite: None
 This course helps students improve cardiovascular efficiency through the use of step platforms. Movement combinations with increasing complexity will be used to increase student's balance and coordination. Toning and stretching exercises will be used to complete muscle balancing and flexibility. Educational material will be distributed to increase student's knowledge of fitness and wellness to improve personal quality of life. (F, Sp, Su)

PFFT 136 Dance Exercise 1

Prerequisite: None
 This course includes warm-ups and exercise from various dance genres including ballet, modern, and jazz designed to develop flexibility, strength, and coordination. Emphasis is placed on toning and stretching. Some sections teach NIA (Neuromuscular Integrative Action) and incorporate other dance forms with yoga and martial arts. (F, Sp, Su)

PFHC - Physical Fitness: Health/Fitness Cardiac

PFHC 151 Cardiac Rehab Exercise 3

Prerequisite: Department Approval
 This continuing course includes medically-monitored exercise and education, which emphasizes reducing the risk factors known to contribute to heart disease. Methods and level of exercise are determined by the participant's physician and the program medical director. Monitored by professional staff. (F, Sp, Su)

PFHW - Physical Fitness: Health/Fitness Wellness

PFHW 100 Health and Wellness Seminar .5-2

Prerequisite: None
 This course introduces the student to 8 hours of various topics. Related to health awareness, wellness, and/or prevention. (F, Sp, Su)

PFHW 105 Med Alternatives/Hlth & Wins 2

Prerequisite: None
 This course discusses alternatives in maintaining health and correcting illness. The students will examine the six major medical systems, as well as many alternative therapies from around the world. (F, Sp)

PFHW 109 Emergency Services Fitness I 1

Prerequisite: None
Restriction: Emergency Medical Services, Paramedic or Fire Science student
 This course provides emergency service students with techniques and practice to maintain and improve the high degree of physical fitness necessary to meet the demands of their profession. (F, Sp, Su)

PFHW 110 Emergency Services Fitness II 1

Prerequisite: None
Restriction: Emergency Medical Services, Paramedic or Fire Science student
 This course provides emergency services students with progressive advancement of techniques and practice of physical fitness to meet professional demands. (F, Sp)

PFHW 111 Emergency Services Fitness III 1

Prerequisite: None
Restriction: Emergency Medical Services, Paramedic or Fire Science student
 This course provides emergency services students with fitness and strength-building techniques to continue to meet the demands of their profession. (F, Sp)

PFHW 112 Emergency Services Fitness IV 1

Prerequisite: None
Restriction: Emergency Medical Services, Paramedic or Fire Science student
 This course provides the ongoing fitness training necessary for emergency medical students to work in their profession. (F, Sp)

PFHW 123 Human Nutrition 3

Prerequisite: Reading Level 5
Recommended: Biology
 An introductory course in human nutrition. Topics include the role of nutrients; digestion, absorption, and metabolism of nutrients; role of vitamins and minerals; and the introduction of current and controversial topics when relevant. Such topics can include fad diets, obesity, nutrition of athletes, food labels, alcohol, sugar, and food additives. (F, Sp)

PFHW 161 Self-Awareness: Key to Wellness 2

Prerequisite: None
 This course introduces the student to aspects of self-awareness that can lead to greater vitality in all aspects of life. The student will learn ways in which he or she is influenced by family and cultural beliefs. Tools for changing behavior will be presented. (F, Sp)

PFHW 163 Healthy Lifestyles 2

Prerequisite: None
 This course introduces the student to lifestyle skills that lead to better health. The student will learn healthy nutritional habits, basic fitness concepts, positive stress reduction, and development of a personalized healthy lifestyle plan. Assessment skills and wellness concepts will be put into practice. (F, Sp, Su)

PFHW 169 Fit for Life Exercise 1

Prerequisite: None
 This course introduces the older student to the benefits and importance of a regular exercise program to combat the debilitating effects which inactivity has upon aging. The student will learn the benefits of cardiovascular exercise as well as flexibility, mobility, and range of motion. (F, Sp)

PFHW 181 Stress Management 1

Prerequisite: None
 This course helps students understand the basic components of the stress response and how they limit our physical, mental and emotional well-being. Students learn and apply basic principles that help to resolve stressful situations and lead to greater sense of ease and pleasure in life, work and relationships. (F, Sp, Su)

PFHW 261 Adult Lifestyles Exercise 2

Prerequisite: Department Approval
 An opportunity for students to maintain and/or improve their fitness level through supervised aerobic exercise sessions and health education. Emphasis is on regular, safe exercise and healthy lifestyles. (F, Sp, Su)

PFIS - Physical Fitness: Individual Sports

PFIS 100 Bowling: Beginning 1

Prerequisite: None
 This course is a basic introduction to bowling. Primary emphasis is placed on spot bowling, release, and approach. Students become familiar with bowling etiquette and scoring. (F, Sp, Su)

PFIS 102 Bowling: Advanced 1

Prerequisite: None
Recommended: PFIS 100 or PFIS 101
 This course is an extensive review of skills introduced at the beginning and intermediate levels. Students develop strategies in lane reading. (F, Sp)

PFIS 103 Golf: Beginning 1

Prerequisite: None
 This course is an introduction to the basics of golf which include equipment, grip, stance and posture, club swing, and the rules and etiquette of golf. (F, Sp, Su)

PFIS 105 Golf: Intermediate 1

Prerequisite: None
Recommended: PFIS 103
 This course will review the basics of golf: equipment, grip, stance and posture, and club swing. Students will be given drills to foster and improve proper swing mechanics for course play. (F, Sp, Su)

PFIS 108 Pool: Beginning 1	PFIS 125 Yoga: Continuing 1
Prerequisite: None	Prerequisite: None
This course introduces students to the fundamentals of pool (pocket billiards). Primary course emphasis is on stance, grip, bridge, aim, and stroke. Cue ball position shots such as stop, follow, draw, and center are covered. (F, Sp)	Recommended: PFIS 124
PFIS 109 Pool: Intermediate 1	This course promotes psycho-physical integration of body and mind through yogic breathing, stretching, and relaxation. Guided breathing and visualization are used to enhance depth and quality of relaxation and meditation. (F, Sp)
Prerequisite: None	PFIS 126 Yoga: Special 1
Recommended: PFIS 108	Prerequisite: None
This course reviews the fundamentals of stance, grip, bridge, aim, and stroke. Skill improvement and concentration techniques are stressed. (F, Sp)	This course teaches modified and adaptive yogic breathing and stretching exercises to enhance the body's mobility of the movement-handicapped person. Feldenkais audio and video instructional tapes are used to extend range of movement. Self-massage, guided relaxation, and meditation are used to reduce stress and tension, as well as to enhance well-being. (F, Sp)
PFIS 111 Table Tennis: Beginning 1	PFIS 131 Seminar: Special Subjects .5-3
Prerequisite: None	Prerequisite: None
This course is an introduction to table tennis as played by tournament players. Strokes covered include forehand and backhand topspin drives, pushes and blocks, and defensive strokes. Discussions will include the rules of table tennis tournaments. (F, Sp, Su)	Seminars are designed to meet specific community needs. (F, Sp, Su)
PFIS 112 Table Tennis: Intermediate 1	PFIS 134 Theory and Practice of Yoga 2
Prerequisite: None	Prerequisite: None
Recommended: PFIS 111	Recommended: PFIS 124
This course is an extension of the beginning course and provides more training in the basic strokes. More advanced strokes such as the loop and the lob are covered. (F, Sp, Su)	This course explores the theoretical foundations of yoga and its historical framework. Lecture, discussion, and in-class practice will give participants an opportunity to deepen their understanding of yoga theory and how it pertains to their daily practice. Students will explore how yoga exercises and relaxation practices promote health and fitness through stress reduction. (F, Sp)
PFIS 113 Competitive Table Tennis 1	PFIS 136 Mini Yoga: Beginning .5
Prerequisite: None	Prerequisite: None
Recommended: PFIS 111	This course is an introduction to yogic breathing and gentle yogic stretching exercises with emphasis on guided relaxation and meditation. Stress and tension are reduced by integrating body, mind, and spirit. (Su)
This course is offered for students who are considering participation in United States Table Tennis Association-sanctioned tournaments. Match play is stressed. Rules are discussed in detail and observed during practice. Footwork and service practice are strongly encouraged. (F, Sp, Su)	PFIS 139 Therapeutic Touch and Yoga 3
PFIS 115 Tennis: Beginning 1	Prerequisite: None
Prerequisite: None	Recommended: PFIS 134
This course will introduce the student to the following skills: ground strokes, serve, volley, lob, and overhead serving as well as doubles and singles strategy. (F, Sp)	This course will combine the theories and practices of yoga and Therapeutic Touch (TT). The foundation of TT is yoga meditation. Classes provide practice in Energy Theory as it applies to individual learners and as an agent of healing. Balanced with TT will be breathing and relevant research and theory. (F, Sp)
PFIS 116 Tennis: Intermediate 1	PFIS 145 Parent/Child Tumbling I .25
Prerequisite: None	Prerequisite: None
Recommended: PFIS 115	This course introduces basic tumbling skills to work toward greater motor skill development through tumbling, stretching, balancing skills, and controlled movement. This class is designed for ages 3-4 years. (F, Sp)
This course will introduce the student to the lob, half volley, and a number of different serves. The student should be able to demonstrate and execute the fundamentals of tennis: ground strokes, net volley, serve, and the knowledge of scoring the game. (F, Sp)	PFIS 146 Parent/Child Tumbling II .25
PFIS 119 Bicycling Camping/Touring 1	Prerequisite: None
Prerequisite: None	Recommended: PFIS 145
This course is a 2 1/2 day bicycle trip in a scenic area of Michigan. The class will include two nights of camping and two days of bike riding 35-45 miles each day. Base camp will be set up or a sag wagon will be used. Carrying your own gear will be optional. (F, Sp, Su)	This course introduces children to elementary combinations of movements to enhance flexibility, strength and coordination. Children learn balancing techniques and sequential movements on a low balance beam. This class is designed for children 5 years and up or for those who have completed Parent/Child Tumbling I. (F, Sp)
PFIS 120 Tai Chi I 1	PFIS 147 Basketball Fitness Training 2
Prerequisite: None	Prerequisite: None
This course introduces the first 30 forms of the Yang-style Tai Chi. Students develop techniques to focus on relaxation and inner calmness. (F, Sp, Su)	This course is not a traditional basketball class. Participants will be in a workout class that will have an emphasis on conditioning using basketball drills and basketballs. Class activities will include running, continuous movement, shooting, defensive slides, and dribbling. (F, Sp)
PFIS 121 Tai Chi II 1	PFIS 201 Ind. Study in Physical Fitness .5-4
Prerequisite: None	Prerequisite: None
Recommended: PFIS 120	An opportunity for self-directed learners to explore topics related to, but not taught in the curriculum. Students spend at least two hours per week for each credit. A detailed proposal must be submitted by the student for approval by the Department and supervising instructor prior to registration. (F, Sp, Su)
This course covers more difficult forms in Tai Chi. Yang-style Tai Chi stresses the health and well-being of the whole person. Yang-style movements allow students to move in slow, smooth, steady, and continuous movement. (F, Sp)	
PFIS 122 Yoga: Beginning 1	
Prerequisite: None	
This course is an introduction to the philosophy of Aikido. Basic movements of Aikido as a martial art are introduced. (F, Sp, Su)	
PFIS 124 Yoga: Beginning 1	
Prerequisite: None	
This course is an introduction to yogic breathing and yogic stretching exercises with emphasis on relaxation and meditation. Yoga postures will be utilized to reduce stress and tension. (F, Sp, Su)	

PFKN - Physical Fitness: Kinesiology

PFKN 170 Foundations of Kinesiology 2

Prerequisite: Reading Level 5 and Writing Level 6
 This is an introductory professional course in Kinesiology, which examines the multiple aspects of physical education and Kinesiology as a discipline, major, and profession. Sub-disciplines and career options in the field, along with historical perspectives and current issues in physical education, will also be discussed. (F, Sp, Su)

PFKN 210 Athletic Training Principles 3

Prerequisite: Reading Level 5 and Writing Level 6
Recommended: Biology
 This course is an overview of prevention, management, and rehabilitation as each relates to athletic injury. It also provides an examination of various techniques used for the assessment, treatments, and rehabilitation of athletic injuries. Other topics include legal implications for the athletic trainer, first aid principles, and taping procedures. (F, Sp)

PFKN 250 Measurements in Kinesiology 3

Prerequisite: Reading Level 5 and Writing Level 6 and Math Level 3
Recommended: PFKN 170
 This is an introductory course which examines materials and methods used for assessment and analysis within Kinesiology. Emphasis will be placed on procedures and tools used within the various sub-disciplines. Measurement and evaluation methods will address motor skills, physical fitness, and psychological components associated with physical fitness. (F, Sp)

PFKN 260 Growth and Motor Behavior 3

Prerequisite: Reading Level 5 and Writing Level 6
 This is a fundamental course which investigates the relationship between biological maturation and physical growth as it relates to motor performance and motor skills learning. The course will also cover fundamentals of motor learning, stages of skill acquisition, physical fitness, and motor abilities of children and youth. (F, Sp)

PFOA - Physical Fitness: Outdoor Activities

PFOA 105 Angling: Beginning 1

Prerequisite: None
 This course introduces the student to angling with demonstrations of basic angling tackle and techniques. Information is provided on Michigan sport fish and their habitat. Fishing trips are taken for steelhead, walleye, salmon, trout, bass, and other game fish. Students are introduced to the excitement, satisfaction and mystique of fishing. (F, Sp)

PFOA 110 Sem: Wilderness Survival Tech 3

Prerequisite: None
 This course provides basic outdoor survival skills and techniques to campers, outdoor enthusiasts, and group leaders. Among the topics are shelter, fire, water, signals, orienteering, food procurement, hot/cold stress management, toxic bites, edible plants of the world, and survival at sea. Optional three-day field trip exercise. (F, Sp, Su)

PFOA 111 Seminar: Wild Food Plants 3

Prerequisite: None
 This course introduces 77 kinds of edible wild plants and their toxic look-a-likes from Michigan and adjoining states. The students learn to distinguish these plants on the basis of observed plant characteristics. The material is illustrated in slides and handouts. Several outdoor experiences are provided. Conservation stressed. (F, Sp, Su)

PFPR - Physical Fitness: Professional

PFPR 105 Psychology of Coaching 1

Prerequisite: None
 This course provides a comprehensive introduction to the art and science of coaching, as well as an introduction to the art of positive coaching philosophy. (F, Sp)

PFPR 106 Aerobic Inst Trning & Cert 3

Prerequisite: None
 This course will train the student on how to instruct a safe and effective aerobic fitness class. High and low impact aerobics, step aerobics, and muscle repetition work using light weights and resistance bands will be emphasized. Safe exercise techniques, developing creative choreography, and teaching modifications for special populations will be covered. Certification exams will be given. (F, Sp)

PFPR 114 Basic Lifeguarding 1

Prerequisite: None
 This course is designed to provide the necessary minimum skills of training to qualify as an entry-level lifeguard. (F, Sp, Su)

PFPR 115 Lifeguard Training 2

Prerequisite: None
 This course is designed to provide the necessary minimum skills training for a person to qualify as a non-surf lifeguard. (F, Sp)

PFPR 116 Water Safety Instruction 2

Prerequisite: None
 This course is designed to assist in teaching basic aquatic skills for instructors. Teaching modalities and how different students learn is covered. (F, Sp)

PFTS - Physical Fitness: Team Sports

PFTS 100 Basketball: Beginning 1

Prerequisite: None
 This course introduces the student to the fundamental skills of basketball. Course emphasis is placed on ball handling, passing, shooting, and rules. (F, Sp)

PFTS 102 Basketball: Advanced 1

Prerequisite: None
Recommended: PFTS 100
 This course is designed for the student who has a sound understanding of basketball skills. Drills will be used to enhance passing and shooting skill development. Emphasis is placed on team play as well as individual skill improvement. (F, Sp)

PFTS 103 Volleyball: Beginning 1

Prerequisite: None
 This course introduces the student to the fundamental skills of volleyball. Course emphasis is on proper serving, setting, forearm passing, spiking, positioning, rules, and game strategy. (F, Sp)

PFTS 105 Competitive Volleyball 1

Prerequisite: None
Recommended: PFTS 103
 This course provides the student with a conceptual framework for advanced offensive and defensive systems of volleyball. Individuals work on skill drills and intraclass competition. (F, Sp)

PFTS 107 Indoor Soccer 1

Prerequisite: None
 This course is designed to introduce students to the basics of indoor soccer. Passing and shooting drills are emphasized along with team play. Modifications to soccer rules are used to accommodate indoor soccer rules. (F, Sp, Su)

PHIL - Philosophy

PHIL 151 Intro: Logic & Critical Think 4

Prerequisite: Reading Level 5
 Introduction to modern logic and elements of reasoning, with special attention given to the roles of language in reasoning, distinguishing deductive from inductive arguments, recognizing levels of meaning and differing world views (Weltanschauungen), analyzing truth-functional relations, avoiding fallacious reasoning or misleading language, and using logical skills in everyday life. (F, Sp, Su)

PHIL 152 Introduction to Ethics 4

Prerequisite: Reading Level 5
 Designed to explore essential requirements for moral reasoning and to call attention to both the factual foundation as well as the traditional criteria utilized for value judgments. Major ethical theories will be discussed, along with their applications to everyday situations. The course will include cross-cultural references, when appropriate. (F, Sp, Su)

- PHIL 153 Knowledge and Reality** 4
Prerequisite: Reading Level 5
Select issues from classical and contemporary philosophy provide an introduction to differences between knowledge and opinion, ways of supporting knowledge claims, and the relationship between the knower and what exists. (F)
- PHIL 211 World Philosophies I** 4
Prerequisite: WRIT 121 2.0 minimum or WRIT 131 2.0 minimum or (Reading Level 5 and Writing Level 6)
Surveys major developments in theories of knowledge, reality, ethics, and society, and their historical role in shaping cultures and human identity. Covers Chinese, Indian, Greek, Roman, Christian, Islamic, and European thought from mythic beginnings to the period of early scientific reasoning. (F, Sp)
- PHIL 212 World Philosophies II** 4
Prerequisite: WRIT 121 2.0 minimum or WRIT 131 2.0 minimum or (Reading Level 5 and Writing Level 6)
Surveys major developments in theories of knowledge, reality, ethics, and society, and their historical role in shaping cultures and human identity. Covers European, Asian, African, Native American, and American pragmatic thought from the scientific revolution to contemporary global concerns. (Sp)
- PHIL 260 Contemporary Ethical Problems** 4
Prerequisite: Reading Level 5 and Writing Level 4
This is an advanced course designed to examine contemporary moral issues which arise through technological and social developments. It will explore the limits of traditional ethical theories and/or their possible adaptation to a changing world. Where appropriate, course includes issues of cross-cultural importance which involve multinational concerns. (Sp)
- PHIL 295 Indep. Study in Philosophy** 1-4
Prerequisite: Department Approval
An opportunity for self-directed learners to explore topics related to, but not taught in the curriculum. Students spend at least two hours per week for each credit. A detailed proposal must be submitted by the student for approval by the Department and supervising instructor prior to registration. (F, Sp, Su)

PHON - Phonics

- PHON 108 Introduction to Phonics** 4
Prerequisite: Reading Level 1 and Writing Level 1
Explores relationship of English language sounds to their corresponding printed alphabetical letters and letter combinations. Examines rules governing variations in these sounds, the process of syllabication, accent, the dictionary pronunciation system, structural analysis of words, and the relationship of phonics to reading and spelling. (F, Sp)

PHYS - Physics

- PHYS 200 Applied Physics** 4
Prerequisite: Math Level 4
This course includes the basic principles of force, work, rate, resistance, energy and power as applied to the four energy systems: these are mechanical (linear and rotational), fluid (liquid and gases), electrical and thermal systems. These four systems are developed by utilizing unifying concepts through mathematical expressions. (F, Sp)
- PHYS 201 Introductory Physics I** 4
Prerequisite: (MATH 122 2.0 minimum or Math 126 2.0 minimum or Math Level 9) and Reading Level 5 and Writing Level 6
First in a two-semester sequence of algebra-based physics courses designed to present the fundamental principles of physics, with applications to other fields. Core topics include one- and two-dimensional, circular and rotational motion, kinematics, forces, energy and momentum. Optional topics include solids and fluids, heat, and alternative energy sources and technologies. Demonstrations and hands-on activities complement the lecture topics. (F, Sp, Su)
- PHYS 202 Introductory Physics II** 4
Prerequisite: PHYS 201 2.0 minimum and Math Level 9
Continuation of PHYS 201. Core topics include electricity, magnetism, vibrations and waves, sound, light and optics. Optional topics include nuclear physics, quantum physics, elementary particles, semiconductors, relativity, and cosmology. Demonstrations and hands-on activities and projects complement the lecture topics. (F, Sp)

- PHYS 215 Physics I: Mechanics** 5
Prerequisite: MATH 152 2.0 minimum or Concurrently and Reading Level 5
First in a two-semester sequence of calculus-based physics courses for science and engineering students. Topics include force and motion, momentum, work and energy, the conservation laws of energy and momentum, rotational motion, static equilibrium, gravitation, and oscillations. Integrated special topics may include relativity, nuclear physics, and thermodynamics. (F, Sp, Su)

- PHYS 216 Phys II:Electrom/Wave/Optic** 5
Prerequisite: PHYS 215 2.0 minimum and MATH 152 2.0 minimum
Second in a two-semester sequence of calculus-based physics courses for science and engineering students. Topics include electric and magnetic forces and fields, electromagnetic energy, currents and circuits, electromagnetic oscillations and waves, mechanical waves and sound, light waves, and physical and geometrical optics. (F, Sp)

- PHYS 225 Physics I Laboratory** 1
Prerequisite: (PHYS 201 2.0 minimum or Concurrently) or (PHYS 215 2.0 minimum or Concurrently) and Reading Level 5
Recommended: Experience with MS Excel or Equivalent Spreadsheet Software
Laboratory course which complements Physics I. Experiments include investigations in mechanics and heat. The lab is intended to increase students' knowledge of natural and technological phenomena as they learn effective laboratory techniques for gathering and interpreting data, communicating their results, and designing and implementing individual and team projects. (F, Sp, Su)

- PHYS 226 Physics II Laboratory** 1
Prerequisite: (PHYS 202 2.0 minimum or Concurrently) or (PHYS 216 2.0 minimum or Concurrently) and PHYS 225 2.0 minimum
Recommended: Experience with MS Excel or Equivalent Spreadsheet Software
Laboratory course which complements Physics II. Experiments include investigations in electromagnetism, sound, and optics. The lab is intended to increase students' knowledge of natural and technological phenomena as they learn effective laboratory techniques for gathering and interpreting data, communicating their results, and designing and implementing individual and team projects. (F, Sp)

POLS - Political Science

- POLS 120 American Political System** 4
Prerequisite: Reading Level 5
An analysis of the American political system. Emphasis is given to the federal system, with special attention to American government at the national level. A study of national governmental institutions, their activities, their functions and methods of organizing resources and making policy. Emphasis is placed upon how democracy depends on political participation by an informed public. Consideration is placed on participation through public opinion, political parties, interest groups, the mass media and social movements. (F, Sp, Su)
- POLS 121 State and Local Government** 4
Prerequisite: Reading Level 5
A study of state and local governmental institutions, their activities, functions, methods of organizing resources and making policy. Consideration is given to relationships between governmental units and problems they confront, including relations between federal, state and local government. Emphasis is placed upon how democracy depends on political participation by an informed public. (F, Sp, Su)
- POLS 205 Government Internship** 3
Prerequisite: None
This course offers the student a chance to observe the actual workings of the political process by participating in it. Participation will provide students an exposure to public policy making and an opportunity to reflect on that process through course assignments. The program covers all levels of government, from city and township through the federal level. (F, Sp)
- POLS 206 Advanced Government Internship** 3
Prerequisite: None
This course offers the student a chance to observe the actual workings of the political process by participating in it. Participation will provide students an exposure to public policy making and an opportunity to reflect on that process through course assignments. The program covers all levels of government, from city and township through the federal level. (F, Sp)

- POLS 240 Introduction to Public Policy** 3
Prerequisite: Reading Level 5
 This course will provide an analysis of political and organizational processes which influence the formulation and implementation of public policy. Special attention will be given to the formulation, implementation, and evaluation of various selected public policies. Further, the course is intended to develop some skills for the evaluation and design of policies. (Sp)
- POLS 250 Amer Pol Parties/Interest Grps** 3
Prerequisite: Reading Level 5
 Emphasizes the origins, structure, and functions of political parties, examines the American political system in terms of citizens' concerns about community and government, and serves as a guide to political action by the citizenry. Included is the role and function of interest groups in American politics. (F)
- POLS 260 Comparative Political Systems** 3
Prerequisite: Reading Level 5
 An introduction to the institutions, processes, and policies of political systems throughout the world. The course will compare political cultures and behavior in the United States, the industrial nations of Europe and Asia, and the developing nations, with special emphasis on the themes of democracy, participation, and political change. (F, Sp)
- POLS 270 International Relations** 3
Prerequisite: Reading Level 5
 A course in contemporary international relations, with emphasis on politics. Concepts, theories, and rudimentary methods are surveyed. The relationship between international politics and U.S. foreign and domestic policy is explored. (Sp)
- POLS 295 Ind Study in Political Science** 1-4
Prerequisite: Department Approval
 An opportunity for self-directed learners to explore topics related to, but not taught in the curriculum. Students spend at least two hours per week for each credit. A detailed proposal must be submitted by the student for approval by the Department and supervising instructor prior to registration. (F, Sp, Su)

PSYC - Psychology

- PSYC 175 Psych of Death:Prep for Living** 3
Prerequisite: Reading Level 5 and Writing Level 4
 Examines psychological theories, concepts, and research that pertain to the study of death and personal death awareness. Topics include cross-cultural and historical perspectives, health care systems, medical ethics, grief/loss issues, funerals and body disposition, legal and social issues, death in modern society, suicide and beliefs about life after death. (Sp)
- PSYC 200 Introduction to Psychology** 4
Prerequisite: Reading Level 5 and Writing Level 4
 The basic orientation to the field of psychology, designed as a general survey and as preparation for advanced courses in the field. Topics include methods, nervous systems, intelligence, development, learning, memory, personality, abnormality, therapy, and social behavior. (F, Sp, Su)
- PSYC 202 Psychology of Personality** 3
Prerequisite: PSYC 200 1.0 minimum and Reading Level 5 and Writing Level 4
 A survey of the leading theories of personality and personality development. Topics include Freudian/psychodynamic, trait, behavioral, humanistic, and Yoga/Buddhist theories, assessment of personality, and major personality theorists. (F, Sp)
- PSYC 203 Social Psychology** 3
Prerequisite: (PSYC 200 1.0 minimum or SOCL 120 1.0 minimum) and Reading Level 5 and Writing Level 4
 A theoretical and empirical approach to understanding individual social and group behavior. Examines the person and the social environment with a focus on attitudes, attributions, interpersonal and intrapersonal behavior, and group processes. (F, Sp)
- PSYC 204 Educational Psychology** 3
Prerequisite: Reading Level 5 and Writing Level 4
 Investigation of the contributions of psychology to education with emphasis upon aspects of child growth and development, motivation, learning, measurement, and group dynamics that affect the achievement of pupils. Specific programs and strategies including use of theory and research to improve instruction and learning will be explored. (F, Sp)

- PSYC 205 Human Growth and Development** 3
Prerequisite: PSYC 200 1.0 minimum and Reading Level 5 and Writing Level 4
 A study of the human life cycle from conception to death. Designed to investigate, describe, and explain changes in the physical, social, emotional, and cognitive areas that are a result of the continuous interaction of maturation and experience. (F, Sp, Su)
- PSYC 209 Cognitive Psychology** 3
Prerequisite: PSYC 200 1.0 minimum and Reading Level 5 and Writing Level 4
 Cognitive psychology is the study of the human mind; its domain includes questions concerning how people perceive the world, remember information, use knowledge, understand language, learn, reason, and solve problems. (F)
- PSYC 210 Brain and Behavior** 3
Prerequisite: (PSYC 200 1.0 minimum or BIOL 121 1.0 minimum or BIOL 127 1.0 minimum) and Reading Level 5 and Writing Level 4
 Brain and Behavior integrates psychology and biology, emphasizing how the nervous system controls behavior. The course provides an examination of the structure and function of the nervous system and the neurobiological bases of mental illness, drug abuse, movement, sleep, memory, feeding and drinking, sensory processing, and neurological disorders. (Sp)
- PSYC 221 Child Psychology** 3
Prerequisite: PSYC 200 1.0 minimum and Reading Level 5 and Writing Level 4
 Explores theories and principles of child cognitive and physical development from conception to puberty. The course covers psychological, sociological, and biological aspects of maturation and development. Topics include issues such as moral development, social development, language development, and cultural and cross cultural influences on the developing child. (F, Sp)
- PSYC 222 Adolescent Psychology** 3
Prerequisite: PSYC 200 1.0 minimum and Reading Level 5 and Writing Level 4
 Examines theoretical and empirical literature related to adolescence, emphasizing biological, psychological, and sociological aspects of maturation and development from puberty to young adulthood. Topics include the adolescent's search for identity; influences of culture, family, school and peer group; and problems and pathologies in adolescence. (Sp)
- PSYC 240 Psychology of Human Sexuality** 3
Prerequisite: Reading Level 5 and Writing Level 4
 An exploration of psychological aspects of human sexuality, including research methods, response, identity, development, attraction and intimacy, communication, orientation, attitudes, diseases, and disorders. (F)
- PSYC 250 Abnormal Psychology** 3
Prerequisite: PSYC 200 1.0 minimum and Reading Level 5 and Writing Level 4
 A survey of the nature, development, diagnosis, and treatment of psychopathology viewed from a general-systems perspective (psychological, sociological, and biological). Major theories of causes, scientific research, and diagnostic and therapeutic techniques are studied with respect to various psychological disorders. (F, Sp, Su)
- PSYC 295 Indep. Study in Psychology** 1-4
Prerequisite: Department Approval
 An opportunity for self-directed learners to explore topics related to, but not taught in the curriculum. Students spend at least two hours per week for each credit. A detailed proposal must be submitted by the student for approval by the Department and supervising instructor prior to registration. (F, Sp, Su)

QUAL - Quality Assurance

- QUAL 100 Intro Quality Assurance** 4
Prerequisite: None
 This course examines the evolution and leaders of total quality management and introduces the concept of continuous improvement of processes, products and services. Practical techniques and methods for evaluating and improving quality and the organizational requirements for managing quality are included. (F, Sp)
- QUAL 103 Probability/Stats Qual Assur** 4
Prerequisite: None
 This course introduces the student to basic probability and statistics as related to quality assurance. Material covered includes probability concepts, average and standard deviation, discrete probability distributions, the normal distribution, the Central Limit Theorem, OC curves and basic acceptance sampling concepts. Computer applications are included. (F, Sp)

QUAL 104 Process Control Charting 3
Prerequisite: QUAL 103 1.5 minimum
 This course examines the theory, selection, application and interpretation of variable and attribute control charts, including charts for small runs, target control charts and multiple characteristic control charts. Application of control charts include both manufacturing and service examples. (Sp)

QUAL 107 Problem-Solving Techniques 3
Prerequisite: None
 This course introduces the student to various problem-solving tools and methods that can be used effectively for process or product improvement. A variety of both manufacturing and service applications will be examined. (F)

QUAL 115 Metrology 4
Prerequisite: QUAL 103 1.5 minimum
 Introduces the student to the theory, use and application of conventional and digital precision instrumentation. Designed to fulfill the needs of quality assurance and skilled trades students requiring a foundation in metrology. (F)

QUAL 121 Intro Statistical Process Cont 3
Prerequisite: None
 This course provides an introduction to statistical process control (SPC) philosophy and techniques. SPC is a means of controlling and improving processes through the use of data. Students will be introduced to the history of SPC, the Deming philosophy, process variation, techniques including control charts and process improvement. (F, Sp)

QUAL 124 Quality Service/Customer Satis 3
Prerequisite: None
 Students strengthen abilities to discover, design and deliver service to customers at levels representing high perceived quality and value and successful competitive positioning for business. Includes foundation concepts of quality, customer service, business operations and planning, customer and market segmentation, customer expectations, service delivery, service quality and business effectiveness evaluation. (F)

QUAL 135 Measure/Gage Geom Tolerances 3
Prerequisite: QUAL 115 1.0 minimum
Recommended: Knowledge and Prior Usage of Measuring Equipment
 This course is designed to develop skills in people who inspect end products using geometric tolerances. Students are expected to already understand how to use and care for standard measuring equipment. Inspection methods for geometric symbols start with sample drawings, selection of appropriate equipment and step-by-step instructions for measuring the part. (Sp, Su)

QUAL 200 Quality Improvement Teams 4
Prerequisite: None
 Covers problem-solving models and techniques for quality/productivity improvement and the human factor related to quality. Emphasis includes interpersonal and communication skills related to quality assurance. Students use problem-solving methods and techniques, learn team member roles, effective communication skills and prepare and present projects to the class. (F)

QUAL 203 Quality Systems Management 4
Prerequisite: None
Recommended: QUAL 100 or Work Experience in Quality
 This course focuses on developing, managing and implementing quality assurance systems. Course material and assignments are designed to develop student skills in intracompany, supplier and customer quality relationships including quality planning, quality manual, procedure and job instruction development, communication, training and preparation for quality certification programs and continuous improvement. (Sp)

QUAL 205 Cost of Quality 3
Prerequisite: None
Recommended: Previous Course Work in Quality
 Introduces students to definitions, philosophy, and methods of quality cost programs. Topics include basic financial concepts, interaction of typical accounting methods and quality cost practices, continuous improvement through the use of quality cost information, identification, collection and reporting of cost data, trend analysis, reducing quality costs, and planning quality programs. (Sp)

QUAL 209 Reliability 3
Prerequisite: QUAL 103 1.5 minimum
 This course introduces the student to definitions and characteristics of reliability. Topics covered include probability density function, reliability function, hazard/failure rate function, life characteristic curve and reliability modeling for components and systems. (F)

QUAL 212 Applied Stats/Qual Assur 4
Prerequisite: QUAL 103 1.5 minimum
 This course covers the topics of hypothesis testing, confidence intervals and sample size determination as applied to various distributions: such as the normal, student T, chi-squared and F Correlation and regression. (F)

QUAL 215 Experimental Design in QA 4
Prerequisite: QUAL 212 1.5 minimum
 This course covers the concepts of analysis of variance and experimental design. Topics include one and two way ANOVA, various graphical and numerical tests for effects, determination and testing of residuals and the use of mathematical models. (Sp)

QUAL 224 Supervisory Skills for Quality 3
Prerequisite: None
Recommended: Work Experience or Previous Quality Courses
 This course will help students to develop skills for supervising personnel in a production environment consistent with current quality engineering principles. Topics include customer focus, employee selection and development, task analysis equipment and resource utilization and continuous improvement of quality and productivity utilizing data and employee involvement. (F)

QUAL 239 Qual Plan/Project Management 4
Prerequisite: None
Recommended: Work Experience or Previous Quality Courses
 This course develops skills for planning quality processes, products and service, and managing projects. Development of quality control plans, FMEAs, QFD, Gantt charts and other tools for project management, and the planning and managing of projects are included. (Sp)

QUAL 242 Quality Auditing 3
Prerequisite: None
Recommended: Understanding of ISO9000 or QS9000
 This course is designed to develop quality auditing skills starting with required quality standards to plan quality audits, evaluate quality system documentation and practices and write audit reports. (F, Sp)

QUAL 251 Current Qual Assur Topics 1
Prerequisite: QUAL 100 1.0 minimum
 A study of specific topics affecting quality assurance practices. This course is designed to expose students to the latest theories and practices in the areas of customer requirements, problem solving, quality management, measurement and statistics. Course format will include lectures, discussion, demonstration and hands-on experiences. (F, Sp, Su)

QUAL 252 Current QA Topics II 2
Prerequisite: QUAL 100 1.0 minimum
 A study of specific topics affecting quality assurance practices. This course is designed to expose students to the latest theories and practices in the areas of customer requirements, problem solving, quality management, measurement and statistics. Course format will include lectures, discussion, demonstration and hands-on experiences. (F, Sp, Su)

RDGR - Reading: Restricted

RDGR 101 Personal Reading I 1
Prerequisite: Reading Level 1 and Writing Level 1
 One-credit laboratory course may be taken concurrently with other reading courses to provide extra instruction and practice. One-to-one instruction. (May repeat for credit three times.) (F, Sp, Su)

RDGR 102 Personal Reading II 2
Prerequisite: Reading Level 1 and Writing Level 1
 Two-credit laboratory course may be taken concurrently with other reading courses to provide extra instruction and practice. One-to-one instruction. (May repeat for credit three times.) (F, Sp, Su)

RDGR 103 Personal Reading III 3
Prerequisite: Reading Level 1 and Writing Level 1
 Three-credit laboratory course may be taken concurrently with other reading courses to provide extra instruction and practice. One-to-one instruction. (May repeat for credit three times.) (F, Sp, Su)

READ - Reading

READ 100 Reading Laboratory 4
Prerequisite: Reading Level 1 and Writing Level 1
 Designed to teach fundamental reading skills through small group/individualized instruction. Intended for students whose reading skills lie within the READ Level 1 literacy range as indicated by the College Placement Test. (F, Sp, Su)

READ 108 Individualized Reading 4
Prerequisite: Reading Level 3 and Writing Level 2
 Designed for average readers, especially adults in the working community, who wish to improve their reading proficiency with one-on-one/small group instruction and directed practice. Students concentrate on areas that need strengthening. (May repeat for credit three times.) (F, Sp, Su)

READ 111 Reading: Essential Strategies 4
Prerequisite: Reading Level 3 and Writing Level 1
 Designed to provide a transition from mastery of basic reading skills and individualized tutorial literacy instruction to a mainstream, classroom learning experience. Includes emphasis in reading for main ideas, vocabulary development, improving comprehension, drawing conclusions from implied meaning, and application of techniques to insure academic survival. (F, Sp, Su)

READ 114 Reading Skills 4
Prerequisite: Reading Level 3 and Writing Level 2
 Designed to increase basic comprehension skills, build vocabulary, and prepare students for college-level reading through the exploration of effective study techniques. (F, Sp, Su)

READ 116 Reading Comprehension 4
Prerequisite: Reading Level 3 and Writing Level 4
 Designed to extend beyond reading comprehension at the literal level, develop inferential ability and recognition of structure and expository patterns in reading and increase reading rate for greater reading efficiency. Additionally, attention is given to vocabulary improvement, multiple purposes of reading, importance of flexibility in reading, and increased concentration. (F, Sp, Su)

READ 165 Critical Reading 2
Prerequisite: Reading Level 5 and Writing Level 4
 This course is designed to go beyond reading comprehension at the literal level and to develop in the individual the ability to grasp implied meanings and draw conclusions. The reader must also be able to perceive the structural and developmental pattern in written material and to judge rationally what he or she reads. (F, Sp, Su)

READ 175 Speed Reading - Adv Vocabulary 2
Prerequisite: Reading Level 5 and Writing Level 4
 Designed for the student of an average or better-than-average reading ability. Increases reading rate and comprehension for greater efficiency in studying and in general reading. Special attention is given to vocabulary improvement, the multiple purposes of reading, the importance of flexibility in reading, and increased concentration. (F, Sp, Su)

REAL - Real Estate

REAL 271 Introduction to Real Estate 2
Prerequisite: None
 Overview of the real estate business. Emphasis on points of law and real estate principles useful to the beginning salesperson and/or potential buyer, seller, or investor. (F, Sp)

REAL 273 Real Estate Investment 3
Prerequisite: None
Recommended: REAL 271 or REAL 274
 Emphasis on investment analysis, financing, depreciation, capital gains, exchanging, and federal tax implications of real estate acquisitions, ownership, and disposal. (F)

REAL 274 Real Estate License Exam 3
Prerequisite: None
 Intense study in the fundamentals of real estate. Preparation for the State of Michigan License Examination, administered by the Applied Measurement Professionals (AMP). This class meets statutory requirements including four hours in fair housing. (F, Sp, Su)

REAL 275 Real Estate Financing 3
Prerequisite: None
 Significance and nature of mortgage lending, mortgage money markets, sources, types of mortgages, instruments, qualifying, the land contract and its use, administration of a mortgage loan, and a loan portfolio and methods of foreclosure. (F, Sp)

REAL 277 Property Management 3
Prerequisite: None
 Covers management and the market, marketing residential and commercial rental space, creating an organized management plan, tenant and landlord laws, rent collection, leases, tenant screening, fair-housing requirements, tenant-owner relations, accounting for investment properties, real estate as an investment, managing apartments, office space, retail stores, and special-purpose buildings. (F, Sp)

REAL 279 Residential Appraisal 3
Prerequisite: None
 This is a survey course on the appraisal of the single family residence. It is designed to expose the student to the basic economic, political, social, and environmental foundations upon which real estate valuation rests. The student will then encounter the processes by which freestanding, single family dwellings are valued. Students will also be acquainted with professional standards and ethics. (F)

REAL 280 Real Estate Law 3
Prerequisite: None
Recommended: REAL 271 or REAL 274
 Topics covered include: land and its elements, land titles, land interests, abstracts and title insurance, deeds, easements, liens, mortgages, land contracts, foreclosures and landlord-tenant relations, private land-use controls including restrictions, condominiums, and tax policies pertaining to real estate. (Sp)

RELG - Religion

RELG 211 World Religions I 4
Prerequisite: Reading Level 5 and Writing Level 6
 This course describes and analyzes the beliefs and practices of Hinduism, Jainism, Buddhism, Sikhism, Confucianism, and Taoism in cultural context, from their origins to the present. It examines their influence on literature and the arts, beliefs and values, socioeconomic and political systems, and science and technology in world civilizations. (F)

RELG 212 World Religions II 4
Prerequisite: Reading Level 5 and Writing Level 6
 This course describes and analyzes the beliefs and practices of Judaism, Christianity, Islam, and other Western religions in cultural context, from their origins to the present. It examines their influence on literature and the arts, beliefs and values, socioeconomic and political systems, and science and technology in world civilizations. (Sp, Su)

RELG 241 Old Testament Literature 4
Prerequisite: WRIT 121 2.0 minimum or WRIT 131 2.0 minimum or (Reading Level 5 and Writing Level 6)
 This course surveys the content of Judaism's Bible (Christianity's Old Testament) in its original Hebrew cultural/religious context, using insights of modern critical scholarship. Origins and early development of Hebrew religious beliefs and practices are examined. (F)

RELG 242 New Testament Literature 4
Prerequisite: WRIT 121 2.0 minimum or WRIT 131 2.0 minimum or (Reading Level 5 and Writing Level 6)
 This course surveys the content of Christianity's New Testament in its original Hebraic and Greco-Roman context, using insights of modern critical scholarship. Origins and early development of Christianity and its religious beliefs and practices are examined. (Sp)

RELG 250 Religions of East Asia 4
Prerequisite: Reading Level 5 and Writing Level 6
 This course surveys the origins and development of East Asian religions. The religious beliefs and practices of Confucianism, Taoism, Buddhism (Mahayana and Tibetan), and Shinto are examined in terms of their vital role in the development of ancient and modern East Asian civilizations. (Sp)

SCIN - Science Technology Internship**SCIN 287 Science Technology Internship** 4**Prerequisite:** CHEM 151 2.0 minimum and CHEM 161 2.0 minimum and Department Approval

This course provides on-the-job training for an applied degree in science technology. Placement is made at an approved training site to earn credits for satisfactory work performance. This internship may be a paid or unpaid work experience. Students will apply knowledge and skills learned in academic courses to real world situations. (F, Sp, Su)

SCIS - Science Seminars**SCIS 296 Directed Histotech Studies** 4**Prerequisite:** Reading Level 3 and Writing Level 4 and Math Level 4
Restriction: Histologic Technician Certificate of Completion**Recommended:** High School Chemistry and Biology

This course gives students the opportunity to learn laboratory skills in Histotechnology. Histotechnology is the preparation of tissue specimens for microscopic evaluation. Students are challenged to analyze/evaluate their skills in safety, tissue processing, embedding, microtomy, special staining, quality assurance, problem solving and technical writing. (F, Sp, Su)

SCIS 297 Independent Study in Science 1-4**Prerequisite:** Department Approval

An opportunity for self-directed learners to explore topics related to, but not taught in the curriculum. Students spend at least two hours per week for each credit. A detailed proposal must be submitted by the student for approval by the Department and supervising instructor prior to registration. (F, Sp, Su)

SDEV - Student Development**SDEV 103 Preventing Parent Burnout** 1**Prerequisite:** None

This course is designed to facilitate an understanding of parent burnout and its impact on mental and physical functions. The class will address causes, stages and symptoms, family and relationship dynamics, and problem solving. The course will provide multiple skills and mechanisms to cope with stress and prevent parent burnout. (F, Sp, Su)

SDEV 110 Leadership Development I 3**Prerequisite:** None

Develop leadership skills through study, observation, and application. Assists students in increasing their understanding of themselves, and the theories and techniques of leadership. Specific skills include: understanding your personal philosophy, visioning, logic and creativity in decision making, servant leadership, ethics, building trust, empowering others, resolving conflict, leader as change-makers, leading with goals, time management, and situational leadership. (F)

SDEV 111 Leadership Development II 2**Prerequisite:** SDEV 110 2.0 minimum

Provides an opportunity to further develop and apply leadership skills introduced in the previous course. Students will learn and apply skills related to conference planning, implementation, and evaluation. Students will serve on Lansing Community College committees and volunteer in community organizations. (Sp)

SDEV 112 Leadership Development III 2**Prerequisite:** SDEV 111 2.0 minimum

Provides an opportunity to apply leadership skills introduced in SDEV 110 and learn skills related to program review and evaluation. Students will evaluate the first year of the leadership program, conference, and applications process and make recommendations. Students will also serve on Lansing Community College committees and volunteer in community agencies. (F)

SDEV 113 Leadership Development IV 2**Prerequisite:** SDEV 112 2.0 minimum

Provides an opportunity to apply leadership skills introduced in SDEV 110/SDEV 112 and learn skills related to candidate screening and selection. Students will select first year leadership program participants and evaluate the second year of the program. Students will serve on Lansing Community College committees and volunteer in community agencies. (F, Sp)

SDEV 118 Stretching Your Dollars 2**Prerequisite:** None

Assistance is given in very basic money management, budget procedures, record keeping, wise shopping practices, low-cost entertainment and recreation, effective debt payment methods, and financial goal-setting and planning. Consumer awareness and problems in the marketplace will also be addressed. (F, Sp, Su)

SDEV 121 Exploring Your Potential 2**Prerequisite:** None

This course is designed to help each person identify past and present achievements which suggest the presence of strengths and potential. The goal of this class is greater realization of one's potential through self-determination. (F, Sp)

SDEV 123 Career Bridge 2**Prerequisite:** None

Career Bridge enhances a smooth transition to college course work by helping the student identify a career direction, learn techniques of study, and build confidence in the pursuit of his or her educational goal. Positive behavioral choices will also be taught, including time management, the elimination of self-defeating behaviors, and increased self-esteem. (F, Sp, Su)

SDEV 124 Techniques of Study 2**Prerequisite:** None

Students examine their study habits and work toward practicing skills to enhance classroom performance. Classes include weekly lectures, discussions, and assignments. Skills covered include goal-setting, time management, notetaking, reading and memory strategies, library use, and taking exams. A valuable aid for beginning and advanced students. (F, Sp, Su)

SDEV 125 Career Planning 2**Prerequisite:** None

Students learn a career planning process by identifying their interests, values, and skills through a variety of self assessment exercises. Students will utilize available resources to research career options and participate in classroom discussions on topics relating to career decision-making. (F, Sp, Su)

SDEV 126 Self-Defeating Behavior 2**Prerequisite:** None

The goal of this course is to learn how self-defeating behaviors begin and are maintained, and how they can be eliminated. Behavior change is aimed at teaching people how to live life more fully and happily by identifying and cultivating life-giving behaviors. (F, Sp, Su)

SDEV 128 Career Research 1**Prerequisite:** None

This accelerated course is designed for students who have already identified career options. The emphasis in this course is research of these options through self-assessment, participation in classroom discussion and the development of a plan of action. (F, Sp, Su)

SDEV 130 Job Search Skills 1**Prerequisite:** None

Skills and techniques in the job search process are taught. Course content covers filling out application, writing resumes and cover letters, interviews, and other techniques used in seeking employment. Group discussions focus upon personal attitude toward job hunting. (F, Sp, Su)

SDEV 135 Tools for College Success 2**Prerequisite:** None

This course provides an introduction to the college experience and to skills that students need to be successful. Topics covered include academic and self-management issues that affect student performance, such as goal-setting, study skills, time management, communication, relationships, career planning, problem-solving, finances and health. (F, Sp, Su)

SDEV 142 Assertiveness I 2**Prerequisite:** None

This course teaches assertiveness. Assertiveness is behavior where a person expresses her or his opinions, feelings, beliefs, wants, personal rights, and values in a way that respects the rights of others. Techniques covered teach participants to identify and practice exercising interpersonal rights and assertive skills. (F, Sp, Su)

SDEV 145 Organizing Time	2	SDEV 225 Parenting in the Millennium	2
Prerequisite: None		Prerequisite: None	
The most effective and efficient use of time is learned through structured discussions, audiovisuals, written exercises, and readings dealing with goal-setting, getting organized, time and work analysis, procrastination, and other barriers to successful time and task management. (F, Sp, Su)		This course will help parents move from "unconscious" to "conscious" parenting, changing from a parental domination to a relationship-centered model. The influence of childhood on parenting style, impact of communication in child-rearing, and understanding the power of the child/parent relationship are included. (F, Sp)	
SDEV 150 Divorce Adjustment	1	SDEV 237 Black Women's Awareness	1
Prerequisite: None		Prerequisite: None	
This course is designed for those who are experiencing or who have recently completed a divorce. The student-centered atmosphere is supportive and geared toward coping with and finding constructive alternatives to the emotional crisis of divorce. (F, Sp)		This class is an exploration of concerns and issues confronting the Black woman in America today. Students will have the opportunity to share their viewpoints and life experiences in response to such questions as: Who is the African-American woman? What are her needs? How can those needs be met? (F, Sp)	
SDEV 151 Divorce: Problem and Solutions	1	SDEV 240 Empathy Training	2
Prerequisite: None		Prerequisite: None	
This course provides an introduction to strength-based solutions in resolving problems with divorce and separation. Topics include: Circuit, Probate and Family Courts; general knowledge of the family law system; resources available to families, and best strategies for positive family outcomes when parents live apart. This is NOT a law course. (F, Sp, Su)		The student will learn how to use empathy as a technique to deal with emotions, values, and decision making in the communication process. The skills will be taught in a small group emphasizing a supportive, experiential atmosphere. (F, Sp, Su)	
SDEV 157 Single Parenting	2	SDEV 245 Dealing with Stress	1
Prerequisite: None		Prerequisite: None	
This course includes such topics as communication, discipline, time-structuring, and the unique concerns of adults faced with the responsibilities of raising children in a single parent family. (F, Sp)		This course is designed to promote awareness of how stress affects mental, emotional and physical health, and behavior. The goal is to help participants to achieve lifetime coping skills. Topics include personal stressors, mental and physical coping strategies, dietary influences, communication, job or role stress, and coping with loss. (F, Sp, Su)	
SDEV 169 Women as Winners	1	SDEV 271 Living Alone Creatively	1
Prerequisite: None		Prerequisite: None	
This course is designed to offer participants new tools for insight, self-awareness, and understanding so that they can learn to set their own goals, emancipate themselves from the boundaries they have set for themselves, and, therefore, learn to become more authentic and self-actualizing. (F, Sp, Su)		Designed for both single men and single women, this course will focus on creative and positive aspects of living alone (or with others). Information will be shared to increase self-awareness, develop skills, and create a support system to further the goal of living alone creatively. (F, Su)	
SDEV 190 Success Group	1	SDEV 285 Build Healthy Relationships II	2
Prerequisite: None		Prerequisite: SDEV 195 2.0 minimum	
Designed to stress improvement of academic performance, the course provides mutual support and deals directly with the problems of underachievement. Students will learn to set and achieve short-term goals, identify motives and attitudes, and study behaviors that lead to success and those that are related to failure. (F, Sp)		A continuation of skills taught in Build Healthy Relationships I (SDEV 195). New techniques will be learned so that healthier relational choices can be made. Students will learn that codependency is an unhealthy way of relating to oneself and others. Emphasis will be on the conviction that each person can grow and heal, and engage in conscious, committed, cooperative relationships. (F, Sp)	
SDEV 192 Counseling for College Success	2	SIGN - Sign Language	
Prerequisite: None		SIGN 160 Orientation to Deafness	2
Designed to stress improvement of academic performance, the course provides mutual support and is solution-focused on setting and achieving short-term goals. Students learn to identify motives, attitudes, and behaviors that lead to success. Group interaction will enhance understanding. (F, Sp, Su)		Prerequisite: Reading Level 3 and Writing Level 4	
SDEV 195 Build Healthy Relationships I	2	This course is designed to introduce the student to pathological and cultural perspectives on deafness and the implications those perspectives have for persons who are deaf. Topics will be explored through discussions, readings, audiovisual presentations, and guest lecturers. (F, Sp, Su)	
Prerequisite: None		SIGN 161 American Sign Language I	3
For those who wish to take a serious look at "what helps" and "what hurts" in building human relationships. Insights can be applied to any type of relationship and will help participants focus on changes they can/need to make in building a healthier relational lifestyle. (F, Sp, Su)		Prerequisite: None	
SDEV 204 Self-Defense and Women I	1	Recommended: SIGN 160 2.0 minimum or Concurrently	
Prerequisite: None		Designed for students who wish to develop basic knowledge of American Sign Language vocabulary and grammar. There is also emphasis in the use of pantomime to explore nonverbal communication and its function within ASL. (F, Sp, Su)	
This seminar is a combination of consciousness-raising and skill-building experiences intended to increase students' understanding, resources, and skills in sexual assault prevention and self-defense. Self-defense techniques taught in this seminar will focus on responses to unarmed attacks. (F, Sp, Su)		SIGN 162 American Sign Language II	3
SDEV 205 Self-Defense and Women II	1	Prerequisite: None	
Prerequisite: SDEV 204 or Concurrently		Recommended: SIGN 161 2.0 minimum	
This seminar is both a review and expansion of the techniques and skills taught in Women and Self-Defense I (SDEV 204). Self-defense techniques taught in this class will focus on "ground defense," responses to armed attacks, multiple attackers, and special assaultive situations. (F, Sp, Su)		Designed to increase students' knowledge and use of American Sign Language vocabulary and grammar, as well as to focus on specific grammatical elements for more in-depth analysis and practice. (F, Sp, Su)	
		SIGN 163 American Sign Language III	3
		Prerequisite: None	
		Recommended: SIGN 162 2.0 minimum	
		Designed to provide additional vocabulary and synthesis of grammatical elements of American Sign Language through expressive and receptive use of conversational sign language. (F, Sp, Su)	

SIGN 164 American Sign Language IV	3	SIGN 265 Adv Interpreting/Transliteration	3
Prerequisite: SIGN 163 2.0 minimum This course is intended to build conceptual understanding and use of American Sign Language. Students will develop American Sign Language skills by interpreting in ASL paragraphs which are presented in English context. (F)		Prerequisite: SIGN 262 2.5 minimum This course is designed to continue the development of skills necessary for interpreter evaluation/qualification. Students will be provided with simulated testing situations using interactive videotapes of hearing/deaf individuals requiring students to interpret/transliterate. (F)	
SIGN 166 Fingerspelling	2	SIGN 267 Sign Internship I	3
Prerequisite: None Recommended: SIGN 162 2.0 minimum or Concurrently Provides the student with concentrated instruction and practice in both expressive and receptive fingerspelling skills. (F, Sp, Su)		Prerequisite: SIGN 261 2.5 minimum Combines student transliterated lectures and supervised placement in various interpreting settings to allow directed observation and application of practical interpreting skills. Students will spend an additional 8 hours a week in their placement setting. (Sp)	
SIGN 167 Beginning Sign to Voice	3	SIGN 268 Sign Internship II	3
Prerequisite: None Recommended: SIGN 162 2.0 minimum Designed to increase the student's receptive skills in conversational sign language focusing on comprehension of the various manual communication systems utilized by deaf persons. Sign-to-voice techniques and practice will be introduced through use of prepared videotapes. (F, Su)		Prerequisite: SIGN 267 2.5 minimum Combines student interpreted lectures and supervised placement in various interpreting settings to allow directed observation and application of practical interpreting skills. Students will spend an additional 8 hours a week in their placement setting. (Su)	
SIGN 168 Expressive Manual Commun	2	SIGN 295 Indep. Study in Sign Language	1-3
Prerequisite: SIGN 162 2.0 minimum This course focuses on synthesizing grammatical elements of American Sign Language and using them in an expressive mode. It creates awareness of conversational behaviors used by the deaf community and provides practice of those behaviors in classroom and other settings. (Su)		Prerequisite: None Recommended: SIGN 261 2.0 minimum An opportunity for self-directed learners to explore topics related to, but not taught in the curriculum. Students spend at least two hours per week for each credit. A detailed proposal must be submitted by the student for approval by the Department and supervising instructor prior to registration. (F, Sp, Su)	
SIGN 170 Creative Arts Signing	2	SOCL - Sociology	
Prerequisite: SIGN 162 2.0 minimum This class explores uses, considerations, and techniques for signing elements of the creative arts including poetry, storytelling, and song. (Su)		SOCL 120 Introduction to Sociology	4
SIGN 176 Advanced Fingerspelling	2	Prerequisite: Reading Level 5 A survey of major theoretical perspectives, concepts, and methods of sociology. Emphasis is given to societal origins, evolution, and organization; culture; cultural diversity; socialization; stratification; social institutions; and social change. The course approaches these concepts from a global perspective and engages students in critical thinking. (F, Sp, Su)	
SIGN 250 Deaf Culture and History	3	SOCL 180 Introduction to Latino Studies	3
Prerequisite: SIGN 163 2.0 minimum This course looks closely at the unique experiences of those in the deaf community. Examines the history of the deaf community in America and the sociology of the hearing-impaired (both deaf and the hard-of-hearing). (Sp)		Prerequisite: Reading Level 5 A survey of social forces that have shaped the experience of Latinos in the U.S. An exploration of Latino relations with non-Latino groups and social institutions using a structural framework which considers race, class and gender. Emphasis is placed on the diversity of the Latino community and current social trends. (F)	
SIGN 260 Linguistic Principles of ASL	3	SOCL 185 Intro to African-American Study	3
Prerequisite: SIGN 163 2.0 minimum An overview of the linguistic organization of ASL, including a linguistic perspective on how ASL is learned and how it is (and is not) influenced by English. Topics relevant to interpreting, such as language variation and translation, will be emphasized. (F)		Prerequisite: Reading Level 5 A survey of culture and social structure of people of African descent and their role in the making of the US society. Theories and concepts pertinent to understanding the development and dynamics of contemporary African-American experience will be explored. Topics include slavery, multiculturalism, civil rights movement and affirmative action. (Sp)	
SIGN 261 Principles of Interpreting	3	SOCL 254 Marriage and Family	3
Prerequisite: ITP Screening Surveys basic interpreting through lecture, role-playing, and classroom discussion. Introduces the ethics of interpreting, roles, and responsibilities of the interpreter. Examines the role and necessary skills of the interpreter in various settings: educational, mental health, vocational rehabilitation, legal, religious, phone, television, medical, deaf, blind, and minimal language skills. (F)		Prerequisite: (SOCL 120 1.0 minimum or PSYC 200 1.0 minimum) and Reading Level 5 and Writing Level 6 A survey of theoretical perspectives on the institutions of marriage and family. Topics will include sex, gender, gender roles, sexual behavior, values, psychological needs, divorce, parenting and family problems. Variations in family types and lifestyles among diverse groups within the U.S. and elsewhere will be examined within the context of social change. (F, Sp)	
SIGN 262 Mock Quality Assurance (QA)	3	SOCL 255 Contemporary Social Problems	3
Prerequisite: SIGN 261 2.5 minimum This course is designed to provide students with simulated testing interpreter/transliteration settings using interactive videotapes of hearing and deaf individuals with the purpose of developing skills necessary for interpreter evaluation. (Su)		Prerequisite: SOCL 120 1.0 minimum and Reading Level 5 and Writing Level 6 This course is a theoretical and empirical survey of the nature and causes of social problems. Current problems such as poverty, crime, racial and gender inequality, demographic and environmental changes, health care, education and family stability are examined. Examples from other societies will be used as tools for comparative analysis and establishing global links. (F, Sp)	
SIGN 263 Intermediate Sign to Voice	3	SOCL 260 Minority Groups	3
Prerequisite: SIGN 164 2.5 minimum This course is designed to develop and refine necessary basic skills and fluency in receptive sign language and for voicing all levels of communication of deaf individuals. Techniques taught include interpreter task analysis, listening, attending, internal message formulation, vocabulary search, and monitoring output. (Sp)		Prerequisite: SOCL 120 1.0 minimum and Reading Level 5 and Writing Level 6 An introduction to the culture and contemporary life styles of American minorities. Emphasis is placed on basic sociological and anthropological concepts with respect to selected minority groups, particularly the African American, Mexican American, Native American, and Asian American. (F, Sp)	
SIGN 264 Advanced Sign to Voice	3		
Prerequisite: SIGN 263 2.5 minimum This course is an advanced class in skill development and fluency in voicing for all communication levels of deaf persons. Techniques taught are voice projection, breathing and relaxation, analysis of sign information, anticipation and prediction, closure, modality switching, correction, image search, decalage, and pacing. (F)			

SOCL 295 Independent Study in Sociology 1-4
Prerequisite: Department Approval
 An opportunity for self-directed learners to explore topics related to, but not taught in the curriculum. Students spend at least two hours per week for each credit. A detailed proposal must be submitted by the student for approval by the Department and supervising instructor prior to registration. (F, Sp, Su)

SOWK - Social Work

SOWK 101 Introduction to Social Work 3
Prerequisite: Reading Level 5 and Writing Level 6
 This course introduces the principles of social work practice. Emphasis is on social work careers, description of methods, skills and standards of practice, definitions of the helping roles, survey of helping agencies and institutions, and overview of social issues and client needs relative to social work practice. (F, Sp, Su)

SOWK 203 Social Work Interviewing 3
Prerequisite: HUSE 100 2.5 minimum or SOWK 101 2.0 minimum and Reading Level 5 and Writing Level 6
 This course examines the purposes and basic concepts of the interview relationship with emphasis on the helping interview. It provides instruction in the techniques of interviewing with an opportunity to engage in practice interviews, including videotaping and feedback. (F, Sp)

SOWK 205 Social Welfare 3
Prerequisite: SOWK 101 2.0 minimum or HUSE 100 2.5 minimum
 This course introduces the definition and concept of social welfare, its history, programs, attitudes, values, and philosophy. It emphasizes the development of private and public services, changing patterns of services, the evolving changes in the Social Security Act and community action, with attention to current issues in social welfare policy. (Sp)

SPAN - Spanish

SPAN 115 Conversational Spanish I 3
Prerequisite: None
 First course of a two-semester sequence in conversational Spanish. Designed for persons who have no knowledge of Spanish and who wish to develop basic conversational skills in the language. Course emphasizes pronunciation of Spanish sounds, practical vocabulary, culture, and essential grammar for communication. Class taught largely in Spanish. (F, Sp, Su)

SPAN 116 Conversational Spanish II 3
Prerequisite: None
Recommended: SPAN 115 or Equivalent
 Second course of a two-semester sequence in conversational Spanish. Designed for persons who have some knowledge of the language and wish to continue developing basic conversational skills. Course emphasizes practical vocabulary, some aspects of Hispanic culture, and essential grammar for communication. Class taught largely in Spanish. (F, Sp, Su)

SPAN 121 Elementary Spanish I 4
Prerequisite: Reading Level 5
 First course of a two-semester sequence in elementary Spanish. Designed for persons with no knowledge of Spanish who wish to develop basic language skills. Elementary practice in listening comprehension, speaking, reading, and writing. Provides useful information about the Spanish-speaking world. Class taught largely in Spanish. (F, Sp, Su)

SPAN 122 Elementary Spanish II 4
Prerequisite: SPAN 121 1.5 minimum and Reading Level 5
 Second course of a two-semester sequence in elementary Spanish. Introduces more complex structures while developing a foundation in the essentials of the language. Emphasizes practice in listening comprehension, speaking, reading, and writing. Provides useful information about the Spanish-speaking world. Class taught largely in Spanish. (Sp)

SPAN 201 Intermediate Spanish I 4
Prerequisite: SPAN 122 1.5 minimum and Reading Level 5
 First course of a two-semester sequence in intermediate Spanish. Begins with review of grammar, and continues with intensive vocabulary building, listening comprehension, and writing compositions. Encourages conversation by introducing discussions about the cultures of the Spanish-speaking world. Class taught entirely in Spanish. (F)

SPAN 202 Intermediate Spanish II 4
Prerequisite: SPAN 201 1.5 minimum and Reading Level 5
 Second course of a two-semester sequence in intermediate Spanish. Continues a review of grammar, intensifies vocabulary building, strengthens listening comprehension and composition writing, and improves oral fluency through intense discussions on the cultures of the Spanish-speaking world. Class taught entirely in Spanish. (Sp)

SPCH - Speech Communication

SPCH 110 Oral Communication in the Workplace 3
Prerequisite: Reading Level 5 and Writing Level 6
 Introduction to oral communication skills in business and technology. Students will learn to interact effectively in diverse workplace situations. Activities include participating in interviews, managing group dynamics, orienting employees, giving planned presentations, and using current technology to enhance business communication. (F, Sp, Su)

SPCH 120 Dynamics of Communication 3
Prerequisite: Reading Level 5 and Writing Level 6
 Introduction to the theory and practice of speaking and listening effectively in interpersonal, group, and public communication situations. The course utilizes readings, lectures, discussions, learning activities, and oral and written assignments to help students both understand the communication process and become more skillful interpersonal, group (team), and public communicators. (F, Sp, Su)

SPCH 130 Fundamental of Public Speaking 3
Prerequisite: Reading Level 5 and Writing Level 4
 Helps beginning speakers develop the skills and confidence needed to speak effectively to audiences in public situations. Through a carefully planned series of speaking assignments, students learn the proper techniques for researching, developing, organizing, outlining, and delivering effective informative and persuasive speeches. (F, Sp, Su)

SPCH 140 Interpersonal Communication 3
Prerequisite: None
 Introduction to fundamental principles and skills of interpersonal communication. Students investigate techniques for interacting effectively in family, intercultural, and male/female relationships. Class discussions, learning activities, and assignments assist students in examining the impact of their communication on others and in developing effective interpersonal skills. (F, Sp, Su)

SPCH 260 Nonverbal Communication 3
Prerequisite: None
 Introduction to the ways people communicate without words. Students investigate nonverbal communication theory and research and learn the messages that gestures, facial expressions, vocal cues, physical appearance, clothing, touch, distance, and time convey in American and foreign cultures. Students' nonverbal communication skills are enhanced through assignments and in-class learning activities. (F)

SPCH 270 Mass Communication 3
Prerequisite: Reading Level 5 and Writing Level 6
 Introduction to broadcast, film, and print media and their impact on the individual and society. Students investigate theory and research on topics including values the media convey, media stereotypes, violence, news, advertising, and the role of media in political campaigns. Assignments and observational projects help students become enlightened media consumers. (Sp)

SPCH 280 Intercultural Communication 3
Prerequisite: None
 Introduction to the theory and practice of successful intercultural communication. Students will investigate how communication is affected by such factors as: dimensions of cultures, cultural values, world views, relationships, and social institutions. Readings, guest speakers, discussions, learning activities, and assignments will help students become ethical and skillful intercultural communicators. (F, Sp)

SPCH 295 Independent Study in Speech 1-4
Prerequisite: Department Approval
 An opportunity for self-directed learners to explore topics related to, but not taught in the curriculum. Students spend at least two hours per week for each credit. A detailed proposal must be submitted by the student for approval by the Department and supervising instructor prior to registration. (F, Sp, Su)

SPEL - Spelling Development

SPEL 150 Spelling: College Prep 1
Prerequisite: Reading Level 3 and Writing Level 4
Recommended: PHON 108
 This eight week course focuses on spelling rules and functions suited to various disciplines within the college and workplace. (F)

SPEL 165 Business Spelling 2
Prerequisite: Reading Level 3 and Writing Level 2
 Covers sophisticated and specialized college-level words frequently misspelled and misused in business. Includes general spelling principles and their exceptions, unusual and unexpected spellings in the context of dictation, pronunciation, proof-reading, and correct usage. (F, Sp)

STAT - Statistics

STAT 170 Introduction to Statistics 3
Prerequisite: (MATH 121 2.0 minimum or Math Level 8) and Reading Level 5 and Writing Level 4
Recommended: Knowledge of Windows Software
 This is a survey course in statistics for students in social science, psychology, education, and other nonbusiness disciplines. Topics studied include descriptive statistics, probability, random variables, normal distribution, t distribution, chi-square distribution, F distribution, confidence intervals, hypotheses testing, correlation, and linear regression. In addition, students will solve applied problems by completing required computer assignments using a statistical software package. (F, Sp, Su)

STAT 215 Intro to Probability and Stats 4
Prerequisite: (MATH 122 2.0 minimum or MATH 126 2.0 minimum or MATH 128 2.0 minimum or MATH 130 2.0 minimum or MATH 141 2.0 minimum) and Reading Level 5 and Writing Level 4
Recommended: Knowledge of Windows Software
 This is a first course in probability and statistics with emphasis on business applications. Topics studied include descriptive statistics, laws of probability, random variables, normal distribution, t distribution, chi-square distribution, F distribution, confidence intervals, hypothesis testing, correlation, and linear regression. In addition, students will solve applied problems by completing required computer assignments using a statistical software package. (F, Sp)

STEC - Stage Technology

STEC 100 Intro to Stage Tech Industry 2
Prerequisite: Department Approval
 This course is an introduction to the stage technology industry for apprentices in the Michigan Stage Technician Apprenticeship Program. It presents the history and current status of the various segments of the industry and introduces basic skills, terminology, safety-concerns, and legal issues designed to prepare the apprentice for on-the-job training. (Su)

STEC 110 Stage Tech Field Experience 1
Prerequisite: Department Approval
Restriction: Stage Technology Majors and MSTAP Apprentices
 This course provides Stage Technology majors and MSTAP apprentices with off-campus, on-the-job training opportunities. Students will answer a variety of temporary job calls to support theatrical, arena, conference, sporting, and other events requiring the expertise of stage technicians. The student must be able to travel throughout mid-Michigan and to work odd hours. (F, Sp)

STEC 120 Stage Lighting and Electricity 3
Prerequisite: None
 Beginning studies in basic electricity and lighting as they relate to the stage. Students will learn fundamentals of electricity, metering, dimming circuits, physics of light and optics, instrumentation, reading of a plot, and various schedules. The student will then apply them in a theater setting. (F)

STEC 130 Audio/Visual Technology 3
Prerequisite: None
 An introduction to audio/visual equipment, principles and practices used in the stage technology industry with an emphasis on convention and trade show settings. Sound amplification, lighting control systems, simple video camera operation, and various projection devices will be included. (Sp)

STEC 140 Theatrical Make-Up/Wardrobe 3
Prerequisite: None
 Provides students with a working knowledge of basic principles of makeup application, wardrobe maintenance and procedures in a production environment. Prepares students to provide basic makeup and wardrobe services for live performing arts, including the theatrical play and dance productions, musicals and operas. An enrichment resource for community theater and schools. (F)

STEC 150 Stage and Arena Rigging 3
Prerequisite: None
Recommended: Basic Algebra
 An introduction to rigging for the entertainment industry. The student will learn fundamentals of high steel, deck, grid, and stationary rigging. Rigging safety practices, safety hardware, rigging equipment, rigging hardware, and calculation of loads for the structure and hardware are covered. The student will apply these practices and equipment to stage and arena settings. (Sp)

STEC 290 Guided Independent Study 1-4
Prerequisite: Department Approval
Restriction: Stage Technology Majors and MSTAP Apprentices
Recommended: 75% Completion of the Stage Technology Program
 An opportunity for self-directed learners to explore topics of particular interest more thoroughly. Students will meet intermittently throughout the semester with an assigned faculty member for guidance and evaluation of progress. A proposal detailing the area of independent investigation must be submitted by the student prior to registration. (F, Sp)

STEC 296 STEC Internship 2
Prerequisite: Department Approval
Restriction: Stage Technology Majors and MSTAP Apprentices
Recommended: 80% Completion of the Stage Technology program
 An off-campus worksite experience that serves as part of a capstone experience for stage technicians. Students will work at venues having a multi-event season and be involved in building, installing, and as members of running crew. Regularly scheduled progress reports will be given and discussed with the supervising faculty member. (F, Sp, Su)

STEC 298 Special Projects 1-4
Prerequisite: Department Approval
Restriction: Stage Technology Majors and MSTAP Apprentices
Recommended: 75% Completion of the Stage Technology Program
 An opportunity for a group of learners to become involved in a common project that will allow each to develop additional skills or to hone present skills. Availability of academically appropriate projects and student interest determines the nature of the experience. (F, Sp)

SURG - Surgical Technology

SURG 100 Fundamental Surgical Tech 3
Prerequisite: Admission to Surgical Technology Program
Co-requisite Courses: SURG 101 and SURG 121 and SURG 122
 Introduction to role and function of the surgical technologist as a member of the surgical team. Lectures present all skills, procedures, and protocol necessary to participate in the operating room. (F)

SURG 101 The Surgical Patient 2
Prerequisite: Admission to Surgical Technology Program
Co-requisite Courses: SURG 100 and SURG 121 and SURG 122
 Lectures will present the protocol and procedures directly affecting the care and safety of the patient. This includes the ethical, legal, and moral responsibilities of the technologist, the concepts of patient care, and preoperative routines. (F)

SURG 103 Surgical Asepsis 2
Prerequisite: BIOL 145 2.5 minimum (previously ANAT 145)
 This course defines and describes pathogenic microorganisms and the causes and prevention of infection in the hospital. The student will be introduced to sterilization, disinfection, and other methods of controlling microbial growth. The process of wound healing is discussed. (F)

SURG 104 Operative Procedures 6
Prerequisite: AHCC 106 2.5 minimum and AHCC 110 2.5 minimum and SURG 100 2.5 minimum and SURG 101 2.5 minimum and SURG 103 2.5 minimum and SURG 122 2.5 minimum
Co-requisite Courses: SURG 123 and SURG 124
 Lectures will present indications for surgery, patient preparation, special equipment and supplies, purpose and expected outcome, and possible complications. (Sp)

SURG 121 Applied Surg Techniques I 1**Prerequisite:** Admission to Surgical Technology Program**Co-requisite Courses:** SURG 100 and SURG 101

First clinical session at an assigned hospital. Application of theory in the use of surgical supplies and equipment before scrubbing in actual procedures. (F)

SURG 122 Applied Surg Techniques II 3**Prerequisite:** SURG 121 2.5 minimum or Concurrently**Co-requisite Courses:** SURG 100 and SURG 101

Clinical session at hospital. Students' first experience of application of theory and clinical skills in actual surgical procedures. (F)

SURG 123 Applied Surg Techniques III 5**Prerequisite:** SURG 122 2.5 minimum**Co-requisite Course:** SURG 104

Clinical session at hospital. Continued application of theory and clinical skills in advanced surgical procedures. (Sp)

SURG 124 Applied Surg Techniques IV 2**Prerequisite:** SURG 123 2.5 minimum or Concurrently**Co-requisite Course:** SURG 104

Clinical session at hospital. Application of theory and clinical skills in advanced surgical procedures and surgical specialty areas. (Sp)

TDTP - Truck Driver Training Program**TDTP 110 Truck Driver Training I 3****Prerequisite:** Department Approval and Department of Transportation Physical

This is the initial course in a sequence of three. This course is intended to begin preparing the student for the State of Michigan CDL written exam and includes a review of D.O.T. rules and proper driver's log book reporting. Vehicle activities include vehicle inspection, drop and hook, and initial driving on secured roadways. (F, Sp, Su)

TDTP 111 Truck Driver Training II 3**Prerequisite:** Department Approval and Department of Transportation Physical

This is the second course in a sequence of three. Students will operate the vehicles on the driving range and local roads, developing the skills necessary to interact with highway traffic. Students must pass the CDL written test and obtain their temporary instructional permits during this course. (F, Sp, Su)

TDTP 112 Truck Driver Training III 3**Prerequisite:** Department Approval and Department of Transportation Physical

This is the final course in the Truck Driver Training Program. The students will complete range driving and backing, do local highway driving, and complete an extensive road trip. The CDL third-party exam will be administered during this course. (F, Sp, Su)

TEDU - Teacher Education**TEDU 150 Intro: Teach & Learn Sci & Math 4****Prerequisite:** Reading Level 5 and Writing Level 6 and Math Level 4 and Department Approval

This is an introductory teacher preparation course designed to build deeper student understanding of learning and human knowledge, using science, and mathematics. The laboratory sessions engage students in hands-on approaches to learning science and mathematics. The seminar sessions engage students in the observation, analysis, evaluation, and reflection of learning. (F)

THEA - Theatre**THEA 110 Introduction to Theatre 3****Prerequisite:** Reading Level 5

Introduction to Theatre includes definition and analysis of theatrical art, incorporating script analysis, theatre history, the relationship between theatre and the culture from which it comes, and the roles of theatre practitioners. (F, Sp, Su)

THEA 111 Basic Stagecraft 2**Prerequisite:** None**Recommended:** Knowledge of Basic Math and Measurement

Introduction to the techniques of stage craft for the performing arts: the basic fundamentals involved in tool usage and safety, stage lighting, lighting plot interpretation, and understanding of the organization of backstage production. (F, Sp, Su)

THEA 116 Scene Design I 3**Prerequisite:** THEA 111 2.0 minimum or Concurrently

Introduction to the elements of design and how they relate to performance. Introduction to color theory as it relates to paint, light, and fabric. Techniques of rendering, translation of a picture to three-dimensionality, spatial relationships, and development of a design concept also covered. (F, Sp)

THEA 120 Introduction to Acting 2**Prerequisite:** None

Explores various acting techniques and introduces the beginning student to the skills necessary to maintain a sustained dramatic performance. Theatre games and improvisation exercises to overcome stage fright and to develop concentration and listening skills are heavily emphasized. Students present final short scene. (F, Sp, Su)

THEA 131 Studio Theatre Performance I 1**Prerequisite:** Theatre Studio Interview**Restriction:** Theatre Majors**Co-requisite Course:** THEA 141 and THEA 171

Course includes rehearsal, performance, and evaluation of a contemporary script. Focus is on an understanding and implementation of skills acquired in THEA 141 and the relationships experienced between actor and director. (F, Sp)

THEA 132 Studio Theatre Performance II 1**Prerequisite:** THEA 131 2.0 minimum**Restriction:** Theatre Majors**Co-requisite Courses:** THEA 143 and THEA 173 and THEA 181

Course includes rehearsal, performance, and evaluation of verse script or scenes from Shakespeare or the classical Greeks. Focus on application of skills acquired in THEA 142, and on relationship between actor and director. Majors only. (Sp, Su)

THEA 140 Acting for Non-Majors 2**Prerequisite:** THEA 120 2.0 minimum or Concurrently**Restriction:** Theatre Non-Majors**Recommended:** THEA 110

Fundamentals of acting, including improvisational techniques; mask work; the physical, vocal, and internal development of character; analysis and scoring by beats of a contemporary script. Non-majors only. (F, Sp)

THEA 141 Acting I - Contemporary 2.5**Prerequisite:** Theatre Studio Interview**Restriction:** Theatre Majors**Co-requisite Courses:** THEA 131 and THEA 171

Fundamentals of acting, including improvisational techniques; mask work; the physical, vocal, and internal development of character; analysis and scoring by beats of a contemporary script. Majors only. (F)

THEA 143 Stage Voice for the Actor 3**Prerequisite:** THEA 141 2.0 minimum**Restriction:** Theatre Majors**Co-requisite Courses:** THEA 132 and THEA 173 and THEA 181

Course will cover strategies in vocal production and variety; will focus on exercises to develop vocal flexibility from Lessac, Linklater, and/or Berry techniques; and will experience vocal techniques which lead to greater emotional awareness and responsiveness. For second-year theater majors. (Sp, Su)

THEA 150 Acting for the Camera 3**Prerequisite:** THEA 120 2.0 minimum**Recommended:** THEA 110

Acting techniques and methods relevant to camera work will be explored. Student work is videotaped and critiqued. Acting for the Camera applies and builds on fundamentals established in Introduction to Acting (F, Sp)

THEA 171 Dramatic Form and Function I 3**Prerequisite:** Theatre Studio Interview**Restriction:** Theatre Majors**Co-requisite Courses:** THEA 131 and THEA 141

An analysis of modern contemporary classics of the theatre. The student will read and analyze a minimum of eight contemporary scripts from Ibsen to Shepard. The student will develop a comprehensive production concept for one of these scripts. (F, Sp)

<p>THEA 173 Movement for the Actor 2 Prerequisite: THEA 141 2.0 minimum Restriction: Theatre Majors Co-requisite Courses: THEA 132 and THEA 143 and THEA 181 Course will cover strategies developing student's physical endurance, reflect, flexibility, and grace. Students will learn the human inner experience in the sphere of human silence. Students may explore movement to music, mime, and/or dance styles and techniques from world cultures. For second-year theatre majors. (Sp, Su)</p> <p>THEA 181 Improvisation 2.5 Prerequisite: THEA 141 2.0 minimum Restriction: Theatre Majors Co-requisite Courses: THEA 132 and THEA 143 and THEA 173 By using the improvisational techniques of mask work and developmental exercises, this course will train the student in long-term, in-depth character development. (Sp, Su)</p> <p>THEA 210 Theatre History 4 Prerequisite: Reading Level 5 and Writing Level 6 Recommended: THEA 110 Examination of the history of drama from primitive times to the present, introducing the overall pattern of theatre history with emphasis on European and American development. Required for all majors. (F, Sp)</p> <p>THEA 220 Play Directing 3 Prerequisite: THEA 110 2.0 minimum or FILM 118 2.0 minimum Recommended: THEA 120 or THEA 210 Introduction to the fundamentals of directing a play, including play analysis, stage composition and working with actors. Practical experience through scenework and class exercises will be emphasized. Students will demonstrate their mastery of the principles taught by directing and presenting a short one-act play for an audience. (F)</p> <p>THEA 223 Independent Study in Theater 1–3 Prerequisite: Department Approval An opportunity for self-directed learners to explore topics related to, but not taught in the curriculum. Students spend at least two hours per week for each credit. A detailed proposal must be submitted by the student for approval by the Department and supervising instructor prior to registration. (F, Sp, Su)</p> <p>THEA 224 Special Subjects in Theatre 1–4 Prerequisite: Department Approval Seminar: Special Subjects in Theater is offered each summer and allows students to take a variety of short-term courses in various theater techniques. The seminar will offer either state-of-the-art techniques or an opportunity to work with professionals. Seminars may include: stage combat, playwriting, new techniques in acting. (Su)</p> <p>THEA 233 Studio Theatre Performance III 1 Prerequisite: THEA 132 2.0 minimum Restriction: Theatre Majors Co-requisite Courses: THEA 240 and THEA 260 Studio Theatre Performance III provides rehearsal and performance opportunities in oral interpretation and/or readers theatre presentations. Usually offered in eight-week format. Second-year theatre majors only. (F)</p> <p>THEA 234 Studio Theatre Performance IV 1 Prerequisite: Studio Theatre Performance 4 Audition Studio Theatre Performance IV provides rehearsal and performance opportunities during a four-week format on an outdoor stage. Students will develop one character and work on physical and vocal projection for large spaces. Limited to individuals who have been selected as cast members in Turner House Festival Productions. (Su)</p> <p>THEA 235 Studio Theatre Performance V 2 Prerequisite: THEA 233 2.0 minimum Restriction: Theatre Majors Co-requisite Courses: THEA 241 and THEA 271 and THEA 281 Studio Theatre Performance V provides the second-year theatre major an opportunity to explore a specific theatrical period or style in both rehearsal and performance. (Sp)</p>	<p>THEA 237 Theatre Special Projects 1–2 Prerequisite: Department Approval Student will be given the opportunity to direct, design, perform, or produce productions for College functions on the main stage or comparable space. Limited to individuals who have been selected as cast members or technical or design staff in a scheduled LCC performance. (F)</p> <p>THEA 238 Theatre Company 2 Prerequisite: Theatre Application Process Students will be given the opportunity to direct, design, produce, or perform in College-supported outdoor theatrical events in the amphitheatre or a comparable space. Students will also participate in company class, in which new ideas in acting training will be presented. (Su)</p> <p>THEA 240 Acting II - Classics 2.5 Prerequisite: THEA 143 2.0 minimum (previously 251) Restriction: Theatre Majors Co-requisite Courses: THEA 233 and THEA 260 Fundamentals of acting in heightened context. Students will develop an understanding of the power of language through verse scansion and the physical, vocal, and internal development of characters from classical literature. Majors only. (F)</p> <p>THEA 241 Acting III: Creating Theatre 2.5 Prerequisite: THEA 240 2.0 minimum (previously THEA 142) Restriction: Theatre Majors Co-requisite Courses: THEA 235 and THEA 271 and THEA 281 Explores acting techniques and styles of different historical periods and/or cultures. Student will survey a cross-section of acting styles and periods then focus on in-depth exploration of particular period or style. Class limited to second-year majors. In-depth area of study selected by instructor. (Sp)</p> <p>THEA 260 Dramatic Form and Function II 3 Prerequisite: THEA 143 2.0 minimum (previously THEA 251) Restriction: Theatre Majors Co-requisite Courses: THEA 233 and THEA 240 Dramatic Form and Function II focuses on the writings of Shakespeare and the classical Greeks. The student will read a minimum of eight classical scripts, analyze them using Aristotelian analysis, and research one script in terms of production styles through history. (F)</p> <p>THEA 271 Dramatic Form and Function III 3 Prerequisite: THEA 260 2.0 minimum (previously THEA 172) Restriction: Theatre Majors Co-requisite Courses: THEA 235 and THEA 241 and THEA 281 Student will study a particular topic through different theatrical forms, plays, and historical periods. The class culminates in each student's selection of a topic and completion of research into the theatrical response to that topic. For second-year theater majors. (Sp)</p> <p>THEA 281 Advanced Improvisation II 1 Prerequisite: THEA 181 2.0 minimum Restriction: Theatre Majors Co-requisite Courses: THEA 235 and THEA 241 and THEA 271 Students will edit and polish scripts and performances. Students may also work improvisationally with local student groups to develop spontaneity, creativity, and cooperation. (Sp)</p> <p>THEA 283 Audition Workshop 1 Prerequisite: THEA 240 2.0 minimum (previously THEA 142) Restriction: Theatre Majors An intense workshop in which participants prepare and polish audition materials suited for a professional audition or audition for advance training. Course usually taught by guest actors, agents, or teachers from larger theatrical or film markets. (Sp)</p> <p>THEA 285 Stage Makeup 2 Prerequisite: None A course in the application of stage makeup to develop a character and to assist the actor in sustaining the character in performance. Emphasizes skills in the use of different kinds of makeup, hairstyling, and appearance changes. (Sp)</p> <p>THEA 295 Acting Styles I 2 Prerequisite: Theatre Acting Styles Audition An elective course for advanced students, this course will give the student an opportunity to explore theatrical styles from musical theater to the Greeks. Style is selected by instructor previous to given semester. Usually offered in eight-week format. (F)</p>
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THEA 296 Acting Styles Performance 2

Prerequisite: Theatre Acting Styles Performance Audition
Students choose to rehearse and perform an in-class presentation of skills developed in THEA 295. Usually offered in eight-week format. (Sp)

TRVL - Travel and Tourism**TRVL 100 Travel Agency Operations 3**

Prerequisite: Reading Level 3
Gain a working knowledge of the reference materials used in the travel industry, as well as industry terminology and overall travel agency operations. (F, Sp, Su)

TRVL 125 Destinations I 3

Prerequisite: None
Examine geography fundamentals as they affect tourism. Emphasis is on travel destinations in North, Central, and South Americas with specific information relative to client appeal. (F)

TRVL 130 Destinations II 3

Prerequisite: None
Examine geography fundamentals as they affect tourism. Emphasis is on travel destinations in Europe, Africa, and the Middle East with specific information relative to client appeal. (Sp)

TRVL 131 Destinations III 3

Prerequisite: None
Examine geography fundamentals as they affect tourism. Emphasis is on travel destinations in Asia and the Far East (including the Philippines, Japan, Australia, New Zealand and Oceania) relative to client appeal. (F)

TRVL 135 Airline/Airport Operations 3

Prerequisite: None
Recommended: Minimum 2.0 in HMFS 101 or TRVL 150
Introduction to the responsibilities of airline and airport personnel, as well as the functions of an airport and airline carriers. Discussion includes ticket counter operations, the gate area, cargo handling and loading, aircraft weight, and the principles of aeronautics. (Sp)

TRVL 140 Airline Computer Reservation I 3

Prerequisite: None
Recommended: TRVL 100 and Typing 30 wpm
The first of a three-course sequence utilizing the American Airlines SABRE reservation system. Hands-on application in the Travel Computer Lab gives students the skills required for creating airline computer reservation as well as airfare and fare rules. (F, Sp)

TRVL 145 Intro Cruise Sales/Ground Tran 3

Prerequisite: None
Recommended: Minimum 2.0 in HMFS 101 or TRVL 150
An exposure to, and understanding of, the reference materials used to sell cruises, railroads, car rentals, and motor coach travel for domestic and international destinations. (Sp)

TRVL 146 Seminar at Sea 2

Prerequisite: None
An exciting opportunity to explore cruising first hand. Included in the cruise are ship tours, cruise activities, shore excursions, and inspections of pier/dock facilities. (F)

TRVL 170 Owning/Managing Trvl Agency 3

Prerequisite: None
Recommended: Minimum 2.0 in TRVL 100 and TRVL 140
Learn how to open or acquire a travel agency. Includes an examination of co-ops, consortiums, and franchise options, as well as an overview for managing daily operations. (F)

TRVL 180 Flight Attendant 3

Prerequisite: None
Recommended: Minimum 2.0 in HMFS 101 and TRVL 135
A career as a flight attendant is examined including the duties and responsibilities surrounding passenger service, crew scheduling, aircraft equipment, and the airline interview process. (Sp)

TRVL 190 Internship and Seminar 3

Prerequisite: HMFS 101 2.0 minimum or TRVL 150 2.0 minimum
Recommended: Minimum 2.0 in TRVL 100 or TRVL 135 or TRVL 210
Available to students who have completed or are approaching 200 hours of work experience in tourism or travel agency operations. A term project is required. (Sp, Su)

TRVL 200 Sales/Mktg for Travel/Tourism 3

Prerequisite: None
Recommended: Minimum 2.0 in HMFS 101 or TRVL 150
Understand marketing strategies by identifying client needs, product, price, and promotion. Develop professional sales skills, as well as examine and develop advertising pieces. (F)

TRVL 210 Group Travel/Escorting Ops 4

Prerequisite: None
Recommended: Minimum 2.0 in TRVL 145 and (HMFS 101 or TRVL 150)
Learn how to organize and escort both domestic and international group tours. Includes procedures for locating the group, assembling and marketing the tour package, and effectively conducting the tour. (Sp)

TRVL 230 Travel/Tourism Law 3

Prerequisite: None
Recommended: Minimum 2.0 in (TRVL 100 or TRVL 135 or TRVL 210) and (HMFS 101 or TRVL 150)
Become aware of the responsibilities and rights which the law imposes on the travel industry. Includes current topics and pending laws and discussion of the consequences that result in violating the law for different segments of industry. (Sp)

TRVL 250 Airline Comptr Reservation II 3

Prerequisite: TRVL 140 2.0 minimum
The second of a three course series utilizing the SABRE system which progresses to in-depth fare research and application, as well as fare rules, and hotel/car reservations for domestic and international travel. (F, Sp)

TRVL 255 Advanced Sabre Training 2

Prerequisite: TRVL 220 2.0 minimum and TRVL 250 2.0 minimum
A course designed to give extended use of the American Airlines SABRE computer. Skills will be taught in the expanded capabilities of the computer in use of international reservations and ticketing, tour bookings, fare storing, and destination information. Skills taught in the use of SABREWorks, using spreadsheets and databases. (F, Sp)

TRVL 260 Travel Agency Accounting 2

Prerequisite: None
Recommended: TRVL 100 2.0 minimum
A course designed to explain and describe basic travel agency accounting concepts. Approximately one-half of the course will be dedicated to the compilation and interpretation of financial statements. The other half of the course will discuss how accounting systems should be constructed for the travel agency business. (Sp)

TRVL 265 Fundamentals of Bus Travel 3

Prerequisite: TRVL 250 2.0 minimum
Recommended: Minimum 2.0 in HMFS 101 and TRVL 145 and TRVL 210 and TRVL 230

Learn how to manage the many issues surrounding business/corporate travel. Special requests, international reservations, fare rulings and routings, currency exchange, internet research, and frequent flyer program management for business/corporate travelers, as well as the customs, cultures, and protocol in international travel are emphasized. In addition, extended use of the Sabre computer reservation system is utilized. (F, Sp)

VCBL - Vocabulary Improvement**VCBL 150 Vocabulary: College Prep 1**

Prerequisite: Reading Level 3 and Writing Level 4
Recommended: PHON 108
This eight week course focuses on the acquisition of vocabulary appropriate to the various disciplines within the college and workplace. (F, Sp)

VCBL 160 Vocab/Spelling: College Prep 2**Prerequisite:** Reading Level 3 and Writing Level 4**Recommended:** PHON 108

Focuses on advanced skills as follows: pronunciation, spelling, and usage of words with the intended goal of mastery which will assure a college or professional vocabulary level. (F, Sp)

VIET - Vietnamese**VIET 118 Beginning Vietnamese I** 2**Prerequisite:** None

This course, the first of two eight-week classes, is designed for students with little or no knowledge of Vietnamese. Students will acquire elementary reading, writing, speaking, and listening skills, with particular emphasis given to tones and pronunciation. Aspects of Vietnamese culture and traditions will be explored. (F)

VIET 119 Beginning Vietnamese II 2**Prerequisite:** VIET 118 1.5 minimum

A continuation of VIET 118. The course reviews Vietnamese pronunciation and grammar before introducing such new concepts as advanced classifier use, kinship terms, and forms of address. Students gain conversational skills through vocabulary building and exercises in reading, writing and recitation. Aspects of Vietnamese culture and traditions will be explored. (F)

WELD - Welding Technology**WELD 100 Combination Welding** 4**Prerequisite:** None

This is a beginning theory and practice course which will introduce the safe operations and applications of oxyacetylene welding, cutting, brazing and shielded metal arc welding. Practice will consist of these methods of joining steel in the horizontal, flat and vertical positions. Destructive testing will also be provided. (F, Sp, Su)

WELD 101 Advanced ARC Welding 4**Prerequisite:** WELD 100 1.5 minimum

Students will develop the skills necessary to produce quality multiple pass fillet and groove welds on steel plates. Conventional and low hydrogen electrodes are used in preparation of passing performance tests in all positions. Destructive testing methods, weld profiles and welding symbols as related to arc welding are introduced. (F, Sp, Su)

WELD 110 Gas Metal ARC Welding 4**Prerequisite:** WELD 100 1.5 minimum

Provides technical understanding and applications of gas metal arc welding and flux cored arc welding. Fundamentals, safety, equipment adjustments, metal transfers and shielding gases will be covered. Develops manual skill in all positions on different thicknesses and types of metals, including mild steel, aluminum and stainless steel. (F, Sp, Su)

WELD 111 Gas Tungsten ARC Welding 4**Prerequisite:** WELD 100 1.5 minimum

Students will develop the skills, principles and applications of gas tungsten arc welding and plasma arc welding. Welds will be done on different thickness of ferrous and non-ferrous metals in all positions. Proper material cleaning, fit up and safety are also introduced. (F, Sp, Su)

WELD 120 Struct Fabrication/Inspec 4**Prerequisite:** WELD 101 1.5 minimum

Introduction to steel fabrication in accordance with the American Welding Society Structural Welding Code D1.1 applications and requirements. The student will be introduced to the numerous destructive and nondestructive methods of welding inspections. Satisfactory completion of this course will assist the student in passing a welding certification test. (F, Sp)

WELD 125 Struct Blueprint Reading Weld 2**Prerequisite:** MATH 050 1.0 minimum or Math Level 4

Blueprint and welding symbols are the universal language of the welding industry. This course is for students, apprentices, technicians and others who must develop the ability to read and accurately interpret blueprints. Teaches awareness of the advancement in metallurgy, welding processes, consumables and strict code enforcement used in industry today. (F)

WELD 130 Bridge Building Past/Present 3**Prerequisite:** Reading Level 5 and Writing Level 4 and Math Level 4

An introduction to the design, fabrication and history of truss bridges. Students learn methods of historic bridge construction that are also relevant to modern industry. This course surveys the history of technology and engineering related to metal truss bridges with a steel bridge contest as a capstone project. (F)

WELD 201 Tool and Die Welding 4**Prerequisite:** WELD 101 1.5 minimum and WELD 111 1.5 minimum

Theory and practice methods involved in welding various alloyed metals, preheating and postheating of metals, recognition of materials, alloying elements and their effects. The proper usage of air, oil and water hardening steels will also be covered. (F, Sp)

WELD 205 Pipe Welding 4**Prerequisite:** WELD 101 1.5 minimum

Theory, cutting, fit up and practice on different sizes of pipe using shielded metal arc welding. Varied weld and base metal testing methods are used to the strict code requirements. Focus on low hydrogen type electrodes in groove and fillet welds in the 2G, 5G, and 6G positions. (F)

WELD 210 Aircraft Welding 2**Prerequisite:** Department Approval

Presents welding applications and methods used in repairs and inspection of aircraft structures in accordance with approved aviation maintenance techniques. (F, Sp)

WRIT - Writing**WRIT 100 Writing Laboratory** 4**Prerequisite:** Reading Level 1 and Writing Level 1

Designed to teach fundamental writing skills and to introduce the student to the writing process. Emphasizes sentence structure, components of a paragraph, and critical reading with written response. Intended for students whose writing skills lie within the WRIT Level 1 score range on the College Placement Test. (F, Sp, Su)

WRIT 110 Confidence in Writing 4**Prerequisite:** Reading Level 3 and Writing Level 2**Recommended:** Minimal Typing Skills Desirable

Designed to help students understand the writing process, reduce writing anxiety, and develop basic writing skills. Emphasizes planning, composing, and revising strategies for experiential writing. Provides frequent writing practice in a supportive workshop environment. Students who earn exit competency of 2.5 will have a writing skill level of 4. (F, Sp, Su)

WRIT 114 Business English 3**Prerequisite:** Reading Level 3 and Writing Level 4

This course is designed to review all parts of grammar, punctuation, and sentence structure. Special emphasis will be given to rules covering proper usage of punctuation, capitalization, possessives, number usage, plurals, and mechanics for written business communication. Business English is required for machine transcription and recommended for business writing. (F, Sp, Su)

WRIT 117 Writing Preparation 4**Prerequisite:** Reading Level 3 and Writing Level 4**Recommended:** Minimal Typing Skills Desirable

Designed to help students improve their writing in preparation for transfer-level academic courses. Students who earn exit competency in this course will have a writing skill level of 6. (F, Sp, Su)

WRIT 118 Personal Writing 3**Prerequisite:** None

Explores the various forms of personal writing (diaries, journals, letters, personal narratives, and autobiography) through written exercises and selected readings. The student's observations and life experiences are the focus of written assignments. Emphasizes language, style, and tone appropriate to the different forms of personal writing. (F, Sp)

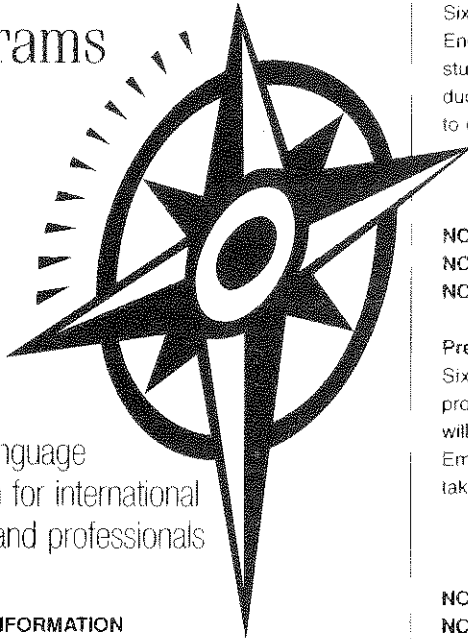
WRIT 119 Writing Skills Review 1**Prerequisite:** Reading Level 5 and Writing Level 6

Designed to help WRIT 121-122 composition students, and others, improve their basic sentence and mechanics skills by providing intensive writing and editing practice in a workshop setting. (F, Sp, Su)

- VANKEMPEN, Gary**
Director, LS Human Resources
B.A., Hope College; Ph.D., Michigan State University
- VILLARREAL, Teresa A.**
Human Resources Information Systems Manager
A.S., Lansing Community College; B.B.A., Northwood University
- VOSSLER, Stephen L.**
Professor, Technology Careers
B.S., Michigan State University
- WALCZAK, Patricia J.**
Professor, Business Careers
A.B., Lansing Community College; B.A., Michigan State University
- WANG, Jing Ling**
Professor, Math and Computer Science
B.S., Beijing Teachers University; M.S., Michigan State University; Ph.D., University of North Texas
- WARNER, Denise L.**
Professor, Language Skills
B.A., Michigan State University; M.A., Michigan State University
- WARREN, Joseph A., III**
Professor, Humanities and Performing Arts
B.A., Michigan State University; M.A., Michigan State University; Ph.D., Michigan State University; J.D., Thomas M. Cooley Law School
- WAWRO, Raymond W.**
Director, Information Technology and Research
B.S., Michigan State University
- WELCH, Robert**
Professor, Technology Careers
Certificate, Michigan State University
- WELSH, Jean**
Professor, Business Careers
B.S., Michigan State University; M.A., Michigan State University
- WERNER, Joseph**
Professor, Business Careers
- WERNER, Virginia M.**
Instructor, Business Careers
B.S., Benedictine University
- WHITEHEAD, Harry**
Professor, Technology Careers
A.A., Western Michigan University; A. and P. License, Western Michigan University; B.S., Western Michigan University
- WIMBISH, Jennifer B.**
Interim Provost
B.S., Hampton University; M.A., Texas A & M University
- WOMBOLDT, David H.**
Networked Operations Specialist, Information Technology and Research
Certificate, State Data Systems Institute
- WOOD, Sharon**
Professor, Technology Careers
B.S., University of Connecticut; B.A., University of Minnesota; M.F.A., Southern Illinois University
- YOUNG, Brenda A.**
Computer Labs Coordinator
B.B.A., Northwood University
- ZIMMERMAN, Dan H.**
Assistant Director, Financial Aid
B.A., Michigan State University; M.A., Michigan State University

- WRIT 121 Composition I** 4
Prerequisite: Reading Level 5 and Writing Level 6
 The study and practice of expository and argumentative discourse to help students write more effectively. Emphasizes writing process, critical thinking, content development, organization, and style. Students will select their best work for their portfolio, which will be externally assessed. Some sections use computers. Others are offered over Internet or interactive television. (F, Sp, Su)
- WRIT 122 Composition II** 4
Prerequisite: WRIT 121 2.0 minimum or WRIT 131 2.0 minimum or (Reading Level 5 and Writing Level 8)
 Builds upon the writing skills developed in WRIT 121 to help students write argumentative essays which use logical support and appropriate documentation. Emphasizes research techniques and use of sources, and the development, structure, and style of the research paper. Some sections use computer classrooms. Others are offered over the Internet or interactive television. (F, Sp, Su)
- WRIT 124 Technical Writing** 3
Prerequisite: Reading Level 5 and Writing Level 6
Recommended: Computer and/or Keyboarding Experience
 A college-level course in the study and practice of technical writing in a variety of formats for select audiences. Covers writing business letters, short reports and memos, formal reports, instructions and definitions, and job application letters and resumes. Students learn basic research techniques. Students will work individually and collaboratively. (F, Sp, Su)
- WRIT 127 Business Writing** 3
Prerequisite: Reading Level 5 and Writing Level 6
Recommended: Computer and/or Keyboarding Experience
 College-level study of the theory and practice of business communication in a variety of forms, with emphasis on letters, memoranda and written reports, including research-based reports. Also covers job applications, resumes, and collaborative oral reports. (F, Sp, Su)
- WRIT 128 Business Report Writing** 3
Prerequisite: Reading Level 5 and Writing Level 6
 This course defines the wide range of reports required in the business world. It emphasizes conducting research, using primary and secondary sources and writing both informal and formal business reports and proposals. An oral presentation is also required. (F)
- WRIT 131 Honors Composition I** 4
Prerequisite: Reading Level 5 and Writing Level 7
 The study and practice of expository and argumentative discourse to help students write more effectively. Emphasizes writing process, critical thinking, content development, organization, and style. Students will select their best work for their portfolio, which will be externally assessed. Some sections use computers. Others are offered over Internet or interactive television. (F, Sp)
- WRIT 132 Honors Composition II** 4
Prerequisite: WRIT 121 3.5 minimum or WRIT 131 3.5 minimum
 Builds upon the writing skills developed in WRIT 121 to help students write argumentative essays which use logical support and appropriate documentation. Emphasizes research techniques and use of sources, and the development, structure, and style of the research paper. Some sections use computer classrooms. Others are offered over the Internet or interactive television. (F, Sp)
- WRIT 250 Issues in Teaching Writing** 2
Prerequisite: WRIT 121 2.0 minimum or WRIT 131 2.0 minimum or (Reading Level 5 and Writing Level 8)
 The study and application of current scholarship relevant to philosophy and practice of a college writing center. Emphasizes study of writing process, composition theory and its application in the writing center, daily practices in writing center work, and development of skills necessary to provide effective writing assistance. (Sp)
- WRIT 260 Creative Writing I** 3
Prerequisite: None
Recommended: WRIT 121
 This course is designed to help students develop expressive abilities in writing poetry and short stories. Emphasizes narrative modes of the short story, traditional meter, and free verse forms of poetry. Includes models from students and masters in both fiction and poetry. (F, Sp)
- WRIT 264 Writing for Publication** 3
Prerequisite: None
Recommended: WRIT 121
 Study of freelance writing and marketing, with focus on nonfiction. Students review a variety of effective writing techniques, study marketing information for their particular fields such as analyses of potential publishers and query letters, and discuss their writing in a workshop setting. Students prepare manuscripts for submission to editors. Word processing available. (F, Sp, Su)
- WRIT 269 Reviewing the Arts** 3
Prerequisite: None
Recommended: WRIT 121
 Develops criteria for evaluating the visual and performing arts, music, and literature. Sharpens the student's skills as a reviewer of the arts through reading, writing, and viewing mass media presentations, exhibits, and performances on- and off-campus. Concepts of form, content, style, and medium of expression will be introduced. (Sp)
- WRIT 270 Creative Writing II** 3
Prerequisite: WRIT 260 2.0 minimum (previously WRIT 285) or Department Approval
 Emphasizes improving the ability to write effective poems, short stories, and novellas. Students select their own subjects and receive immediate responses through group discussion. (F, Sp)
- WRIT 279 Prose Style** 3
Prerequisite: None
Recommended: WRIT 121
 An advanced study of non-fictional prose writing. Extensive directed practice helps experienced writers make their own writing clear, precise, direct, and graceful. Workshop sessions include a study of the expectations and choices in various types of writing, and of the relationships among purpose, structure, words, sentences, grammar, punctuation, and style. (Sp)
- WRIT 280 Creative Writing III** 3
Prerequisite: WRIT 270 2.0 minimum (previously WRIT 286) or Department Approval
 Examines language and style as the most critical choices a creative writer makes in directing the reader's perception of and response to the work. Develops the writer's ability to control tone and style. Manuscripts will be reproduced and discussed in a workshop setting. (Sp)
- WRIT 282 Forum for Authors** 3
Prerequisite: WRIT 264 2.0 minimum (formerly WRIT 281) or WRIT 270 2.0 minimum (formerly WRIT 286)
 An advanced course in freelance writing for authors working on manuscripts. Students meet in a workshop setting to refine ideas, critique writing, solve problems, and develop material for submission to periodical or book editors. Includes advanced study of effective writing techniques and market information. Occasional speakers. Word processing available. (Sp)
- WRIT 295 Independent Study in Writing** 1-4
Prerequisite: Department Approval
 An opportunity for self-directed learners to explore topics related to, but not taught in the curriculum. Students spend at least two hours per week for each credit. A detailed proposal must be submitted by the student for approval by the Department and supervising instructor prior to registration. (F, Sp, Su)
- WRTR - Writing Restricted**
- WRTR 101 Writing Practice I** 1
Prerequisite: Reading Level 1 and Writing Level 1 and Department Approval
 May be taken concurrently with other writing courses to provide extra individualized instruction and practice. (May repeat for credit three times.) (F, Sp, Su)
- WRTR 102 Writing Practice II** 2
Prerequisite: Reading Level 1 and Writing Level 1 and Department Approval
 May be taken concurrently with other writing courses to provide extra individualized instruction and practice. (May repeat for credit three times.) (F, Sp, Su)
- WRTR 103 Writing Practice III** 3
Prerequisite: Reading Level 1 and Writing Level 1 and Department Approval
 May be taken concurrently with other writing courses to provide extra individualized instruction and practice. (May repeat for credit three times.) (F, Sp, Su)

The English Language & Culture Center of International Programs



Intensive
English language
instruction for international
students and professionals

GENERAL INFORMATION

The English Language and Culture Center (ELCC) provides intensive English language instruction primarily to international students who need to improve their English skills before beginning college-level academic course work. The Center also provides customized English language and American culture instruction to groups that need specialized programs for professional or other activities. The ELCC is located in the International Programs Office, and its courses are non-credit. The ELCC issues I-20 forms to international students.

COURSES

The ELCC offers the following courses at 6 different levels:

- COURSES: Grammar, Speaking/Listening, Reading and Writing

- LEVELS: High Beginning; Intermediate I and II; and Advanced I, II, and III.
- INSTRUCTIONAL HOURS: 6 hours/week
- SESSION LENGTH: 8 weeks

TOEFL preparation courses (3 hours/week) are also offered in each session.

TUITION & FEES

Contact the ELCC office at (517) 483-1006.

APPLICATION & INFORMATION

To apply or obtain more information, call the ELCC office at (517) 483-1006 or call LCC's toll-free line at 1-800-644-4LCC and ask to be connected to the ELCC. Or check our web site at: <http://www.lansing.cc.mi.us/executive/intlprog/elcc/index/htm>

COURSE DESCRIPTIONS

NCEL 111	High Beginning Speaking/ Listening	non-credit
NCEL 112, 113	Intermediate Speaking/ Listening I and II	non-credit
NCEL 114, 115, 116	Advanced Speaking/ Listening I, II, and III	non-credit

Prerequisite: Placement test or pass the immediately preceding course
Six-session sequence in speaking and listening English. Designed to provide American English Language instruction through listening and speaking exercises for non-native students who wish to pursue college level course work. Students will practice the production of target sound, discussing various topics, note-taking, and various other tasks to develop oral and listening skills.

NCEL 121	High Beginning Reading	non-credit
NCEL 122, 123	Intermediate Reading I and II	non-credit
NCEL 124, 125, 126	Advanced Reading I, II, and III	non-credit

Prerequisite: Placement test or pass the immediately preceding course
Six-session sequence in reading English. Designed to develop increased reading proficiency for non-native students who wish to pursue college level courses. Students will read various materials which they may encounter during their academic studies. Emphasizes vocabulary building, gaining reading speed, summarizing main ideas, note-taking, and various reading strategies.

NCEL 131	High Beginning Writing	non-credit
NCEL 132, 133	Intermediate Writing I and II	non-credit
NCEL 134, 135, 136	Advanced Writing I, II, and III	non-credit

Prerequisite: Placement test or pass the immediately preceding course
Six-session sequence in English writing. Designed to help non-native students improve their writing skills in preparation for college courses. Emphasizes process-oriented writing, including brainstorming, outlining, drafting, and revising. Students will work on writing well-developed and cohesive paragraphs and essays, as well as learning various rhetorical styles.

NCEL 141	High Beginning Grammar	non-credit
NCEL 142, 143	Intermediate Grammar I and II	non-credit
NCEL 144, 145, 146	Advanced Grammar I, II, and III	non-credit

Prerequisite: Placement test or pass the immediately preceding course
Six-session sequence in standard American English grammar. Designed to help students increase their proficiency in writing, reading, and speaking and listening. Emphasizes grammatical structures in various contexts, including verb structures, articles, logical connectors, comparatives and conditionals. Attention will be given to grammatical forms and their appropriate use.

NCEL 151	TOEFL Preparation	non-credit
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Prerequisite: Intermediate Grammar II
Two-session sequence in TOEFL preparation. Designed to prepare students for the computer-based TOEFL test. Will help students become familiar with particular computer-based TOEFL tests, including the grammar, vocabulary, and listening comprehension materials frequently encountered in these tests. Students also become familiar with the TOEFL writing (TWE) format.





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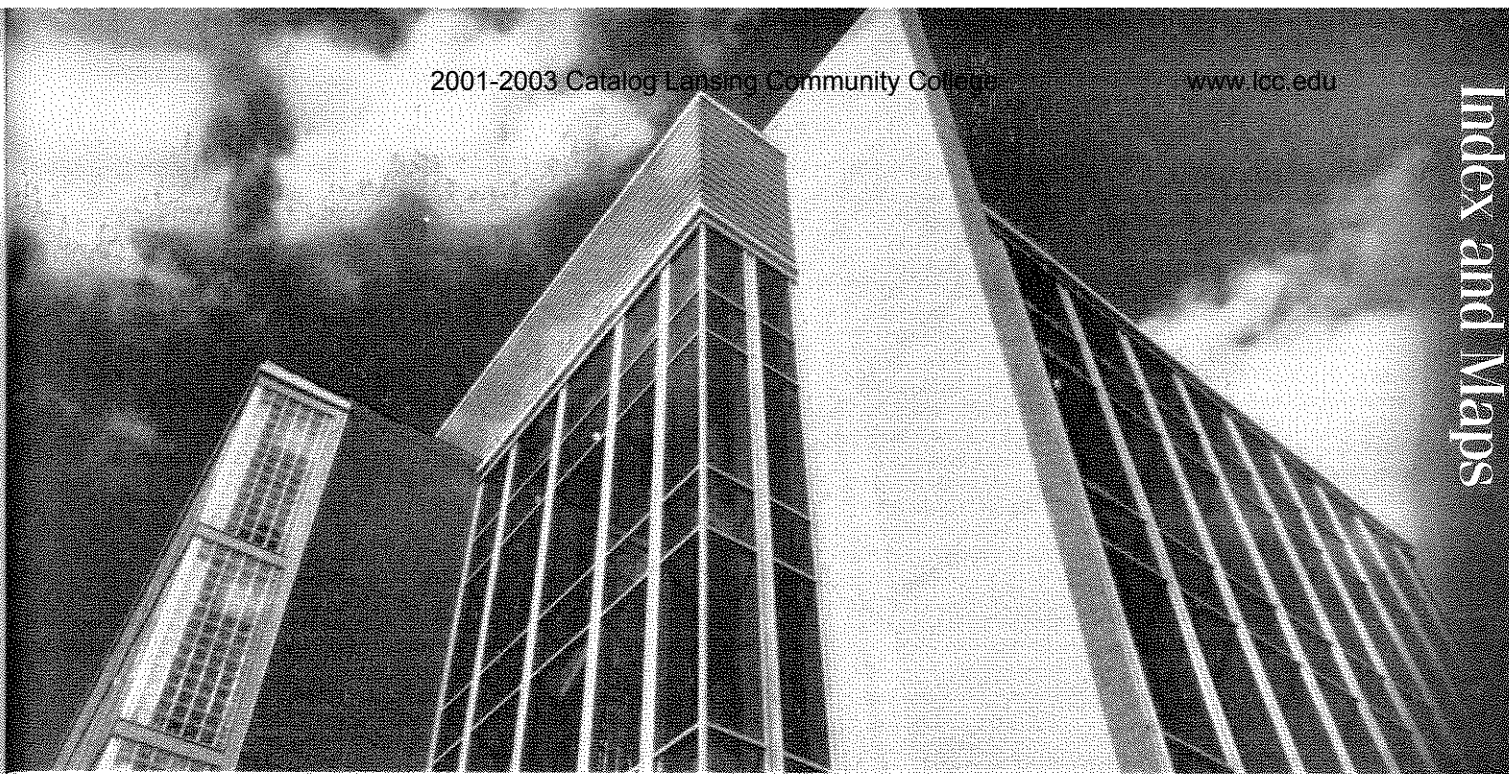
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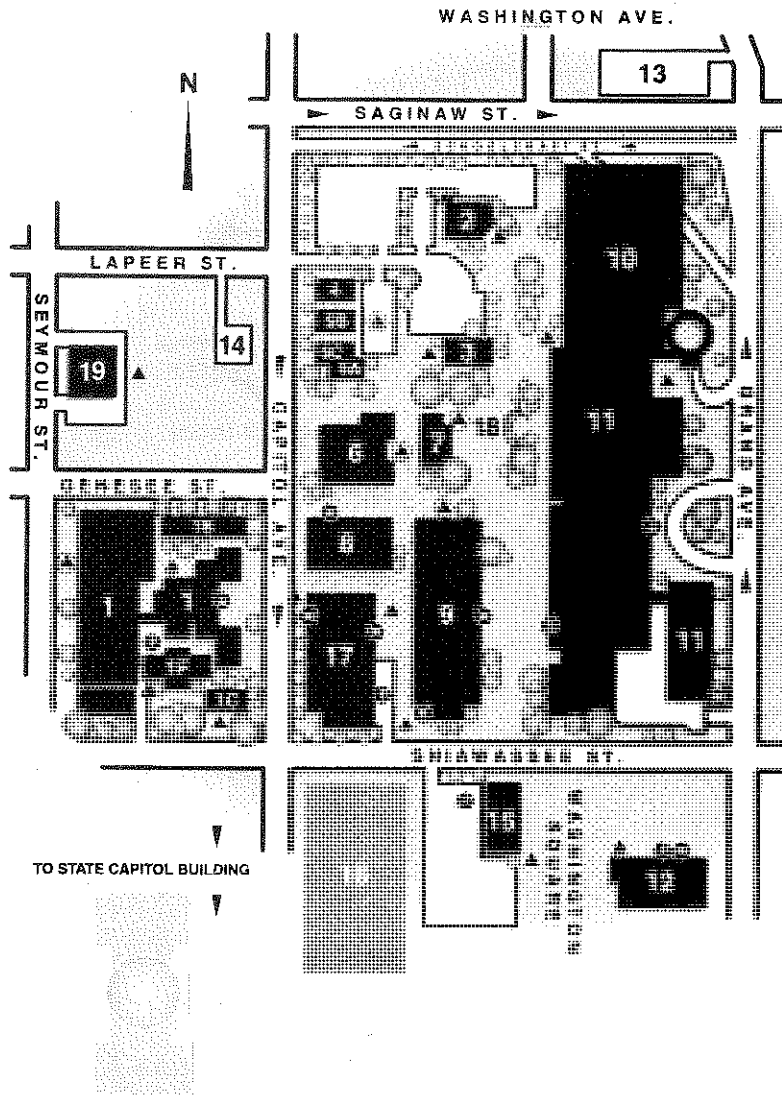
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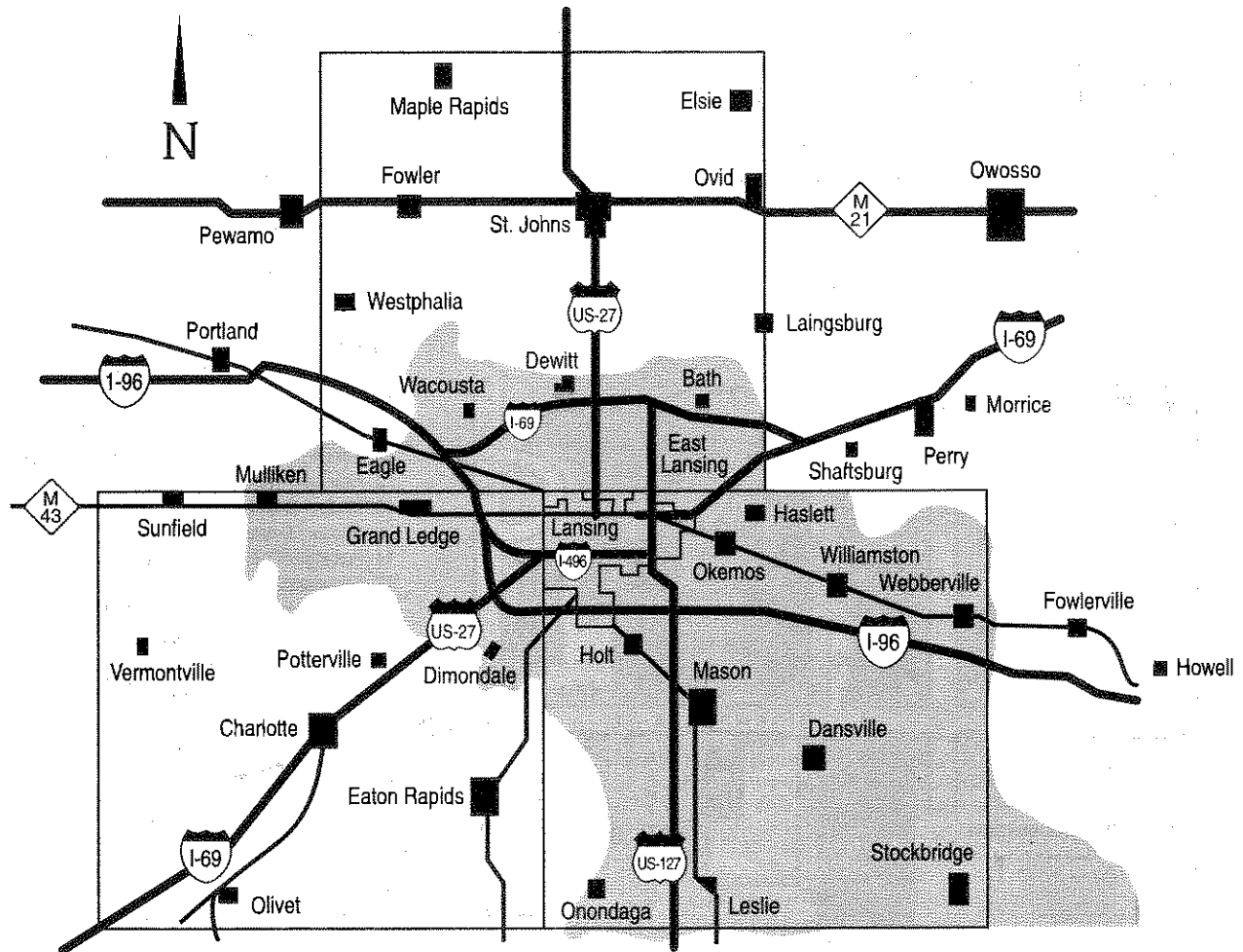
Campus Map



- 1B. Office Unit B (OUB)
- 1C. Office Unit C (OUC)
- 1F. Office Unit F (OUF)
- 1. Old Central (OC)
- 2. Photography Center (PC)
- 3. Administration (ADM)
- 4. North House (NH)
- 5. Herrmann Conference Center Complex (HCC)
- 5A. Herrmann Conference Center
- 5B. Rogers-Carrier House
- 5C. LCC Board Room
- 6. Dart Auditorium (DRT)
- 7. Turner House (TH)
- 8. Student Personnel Services (SPS)
- 9. Arts and Sciences (A&S)
- 10. LCC Parking Ramp (StarCard and Cash)
- 11. Gannon Vocational-Technical Center (GVT)
- 12. Academic and Office Facility (AOF)
- 13. Student Employee Parking Lot (Student Employee Parking Card Only)
- 14. Parking Lot (StarCard Only)
- 15. Continental Building (CB)
- 16. City Parking Ramp (StarCard and Cash)
- 17. Abel B. Sykes, Jr. Technology and Learning Center (TLC)
- 18. LCC Outside Amphitheater
- 19. BCI (Business & Community Institute)

- ⊖ Handicapper Entrances with Electronic Doors (Push-button electronic door at 2nd floor entrance of GVT from parking ramp.)
- ⊕ Handicapper Parking (Parking on 2nd floor of Parking Ramp and other marked spaces.)
- ▲ Designated Smoking Area
- ⊕ Designated Smoking Area (Covered Area)

Service Area Map



The following School Districts constitute the LCC Resident District:
 Bath, Dansville, DeWitt, East Lansing, Grand Ledge, Haslett, Holt, Lansing, Leslie,
 Mason, Okemos, Stockbridge, Waverly, Webberville and Williamston.

Lansing Area Map



Learning Center Locations

Bailey Community Center
300 Bailey St. E. Lansing 48823
(517) 337-4442
(517) 337-2610

Bath High School
6175 W. Clark Rd. Bath 48808
(517) 641-6724
(517) 641-7046

Capital Area Career Center
611 N Hagadorn Rd. Mason 48854
(517) 244-1366
(517) 676-3602

Charlotte Public Schools
378 State St. Charlotte 48813
(517) 543-8550
(517) 543-8560

Corunna High School
417 E. King St. Corunna 48817
(517) 743-3441
(517) 743-5901

Dansville Agricultural Schools
1264 E. Adams. Dansville 48819
(517) 623-6120 X 233
(517) 623-6719

Dewitt Public Schools
205 W. Washington Dewitt 48820
(517) 668-3480
(517) 668-3484

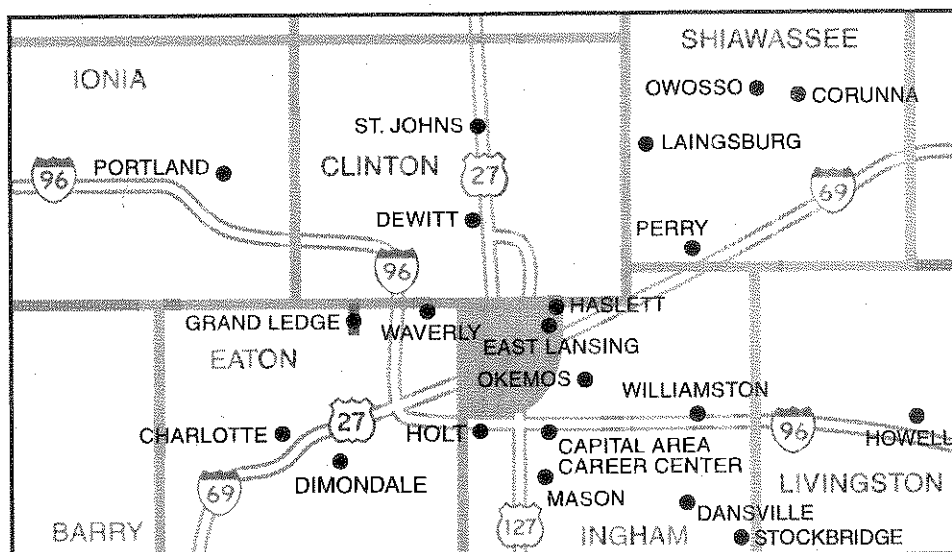
East Lansing MacDonald Middle School
1601 Burcham East Lansing 48823
(517) 337-4442
(517) 337-2610

Fowler High School
700 Main St. Fowler 48835
(517) 593-2250
(517) 593-2358

Fowlerville Community Schools
7677 Sharp Fowlerville 48836
(517) 223-6027
(517) 223-6484

Grand Ledge Public Schools
225 W. Kent G.L. 48837
(517) 627-6612
(517) 627-1767

Grand Ledge Sawdon
220 Lamson, Grand Ledge, 48837
(517) 627-6612/6144
(517) 622-1239



Haslett Public Schools
1590 Franklin Haslett 48840
(517) 339-2665
(517) 339-8155

Hill Vocational Center (Star)
5815 Wise Rd. Lansing 48911
(517) 272-2939
(517) 483-9750

Holt Public Schools
2020 Park Ln. Holt 48842
(517) 699-1515
(517) 694-3233

Howell Public Schools
1400 W. Grand River Howell
(517) 548-6281
(517) 545-1466

Laingsburg Community Schools
8008 Woodbury Rd. 48848
(517) 651-5067
(517) 651-2615

Lansing Catholic Central
501 Marshall St. Lansing 48912
(517) 484-4465
(517) 267-2135

Livingston County Center
1600 Pinckney Rd. Howell 48843
(517) 545-3522
(517) 545-3525

Mason Public Schools
1001 S. Barnes Mason 48854
(517) 676-6528
(517) 676-0298

Morrice Area Schools
691 Prudy Ln. Morrice 48857
(517) 625-3142
(517) 625-3866

Nokomis Learning Center
5153 Marsh Rd. Okemos 48864
(517) 349-5777
(517) 349-8560

Okemos Public Schools
4000 Okemos Rd. Okemos 48864
(517) 349-2209 x2827
(517) 349-6643

One Stop Center
2110 S. Cedar Lansing 48910
(517) 492-5579
(517) 492-5501

Owosso Public Schools
765 E. North St. Owosso 48867
(517) 723-5598 or 8231
(517) 723-7777

Perry Public Schools
2775 Britton Perry 48872
(517) 625-3108
(517) 625-6256

Portland Public Schools
1100 Ionia St. Portland 48875
(517) 647-2987
(517) 647-2975

STAR Institute
5815 Wise Rd. Lansing 48911
(517) 394-1956
(517) 394-8366

St. Johns Wilson Center
101 W. Cass St. St. Johns 48879
Suite B
(517) 224-2017
(517) 224-0946

Stockbridge Community Ed.
303 W. Elizabeth Stockbridge
(517) 851-8222 x 3
(517) 851-8334

The Summit
9410 Davis Hy Diamonddale 48821
(517) 319-1000 x100
(517) 319-1004

Waverly Community Schools
3131 W. Michigan 48917
(517) 484-5600 X 1781
(517) 267-1800

Williamston Community Schools
418 Highland Williamston 48895
(517) 855-4636
(517) 655-4904