Lansing Community College is an equal educational opportunity college. Discrimination on a basis of religion, race, color, national origin, age, sex, height, weight, marital status, disability, sexual orientation, or any other category protected by law is prohibited. Title IX/Section 504 Coordinator: North House, (517) 483-1858.

The programs, policies, rules, regulations, procedures, fees, and tuition printed in this catalog are represented as of Fall Semester 1997, and will generally remain in effect through Summer Session 1998.

The College reserves the right to make changes in its programs, policies, rules, regulations, procedures, fees, tuition, organizational structure, and faculty and staff through the appropriate College processes. Every effort will be made to give as much advance notice as possible.

LCC must reserve the right to modify or eliminate programs that are described in this publication. In the event such an action is taken, students affected will be advised by their departments of the options available to them to complete their degrees. Every reasonable effort will be made to permit students to complete these programs or similar programs.

The College reserves the right to limit enrollments and to change requirements for enrollment in both programs and courses as necessary. When enrollment limitations are imposed, every reasonable effort will be made to provide alternatives for students affected.

It is the responsibility of each student to be aware of and understand College regulations as published.
LCC: CELEBRATING 40 YEARS OF STUDENT SUCCESS

At Lansing Community College, we’ve committed to excellence in education for 40 years. Since our beginnings in 1957, we’ve grown from a small technical college to one of the largest, most comprehensive community colleges in the nation. We offer classes year-round on our 28-acre campus in the heart of Michigan’s capital. You can choose from more than 150 degree and certificate programs and nearly 2,500 courses, or complete the first two years of a liberal arts education. And to ensure you’ll have the comprehensive mix of education and training you’ll need for the 21st century, we’re constructing our new Academic Services Facility. This premier addition to our downtown campus will house state-of-the-art computer labs and classrooms, a library and a media services center.

In addition to our main campus, we operate the Aviation Center at Capital City Airport in Lansing, and the Truck Driver Training Center near Battle Creek. Plus, we have Learning Centers in more than 20 communities within our 30-mile service district—which means our classes are accessible to more people in more areas.

LCC is accredited by the North Central Association of Colleges and Schools, and serves nearly 40,000 people annually. Our 39th commencement is just one symbol of our commitment to providing lifelong education for all.
# TABLE OF CONTENTS

Mission Statement .................................................. 1  
Board of Trustees .................................................. 2  
Message from the President ...................................... 3  
General Information ............................................... 5  
  Directory of Departments ........................................ 6  
  Academic Calendar ............................................... 7  
Policies, Procedures, and Regulations ........................... 8  
Degree and Certificate Programs ................................ 35  
  Associate in Arts Degree ......................................... 36  
  Associate in Science Degree ..................................... 43  
  Applied Degrees and Certificates .............................. 47  
  Transfer Information ............................................ 163  
Course Descriptions .............................................. 165  
  How to Read Course Descriptions ............................... 166  
  Course Code Abbreviations ...................................... 166  
  Descriptions ...................................................... 168  
Special Courses .................................................... 265  
  Descriptions ...................................................... 266  
Faculty and Staff Directory ...................................... 269  
Index and Maps ..................................................... 277  
  Index ............................................................... 278  
  College Maps ...................................................... 285

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 Marketing, Community and Board 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

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Chair

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MESSAGE FROM THE PRESIDENT

Dear Students,

Welcome to Lansing Community College. We are very glad and highly honored that you have made us your partner in the pursuit of your educational goals.

We have much to offer: a wide variety of courses and activities, an excellent learning facility, and a world-class faculty and staff. Lansing Community College has provided premier lifelong learning opportunities for the greater Lansing area for 40 years now, and we are very proud of what we can offer you.

You are our customer and your academic and workplace successes are the reason for our being. Please do not hesitate to ask for help in individualizing your experience here at LCC. We have learning support specialists, counselors, tutors, advisors, mentors, and many other highly motivated professionals ready to help make your learning experience at LCC a friendly and productive one.

If there is anything I can do personally to assist you in reaching your goals, please contact me at the Executive Office at 517/483-1851.

Cordially,

Abel B. Sykes, Jr.
President
Lansing Community College
## DIRECTORY OF DEPARTMENTS

### Careers Division

**Career Services (GVT 211)** .......................................................... 483-1172
Career and Employment ......................................................... 483-1172
Development Services .......................................................... 483-1172

**Business Careers (OC 210)** .................................................. 483-1522
Accounting ........................................................................ 483-1599
American Institute of Banking ........................................ 483-1532
Business ............................................................................. 483-1532

**Computer:**
- Business Software .......................................................... 483-1587
- Information Systems for Business .................................. 483-1546
- Office Applications .......................................................... 483-1587
- Word Processing .............................................................. 483-1587
- Credit Union .................................................................. 483-1541
- Hotel/Motel and Food Service Operations ....................... 483-1542
- Insurance ........................................................................ 483-1599
- Labor Relations .............................................................. 483-1532
- Legal Assistant ............................................................... 483-1503
- Management ................................................................ 483-1532
- Marketing ....................................................................... 483-1532
- Office Administration ........................................................ 483-1587
- Property Valuation and Assessment Administration ......... 483-1532
- Real Estate ..................................................................... 483-1532
- Secretarial ...................................................................... 483-1587
- Tourism: Airline and Travel Agency ................................. 483-1542

**Human, Health, and Public Service Careers (GVT 175)** ........... 483-1410
- Allied Health ................................................................... 483-1410
- Child Development .......................................................... 483-1410
- Community Health Services ........................................... 483-1410
- Correctional Services (OC 224) ........................................ 483-1570
- Court and Conference Reporting .................................... 483-1516
- Criminal Justice ............................................................. 483-1570
- Dental (AAS 007)
  - Assisting ................................................................. 483-1457
  - Hygienic ................................................................. 483-1457
- Diagnostic Medical Sonography ..................................... 483-1410
- Emergency Medical Technology ...................................... 483-1410
- Fire Science .................................................................. 483-1346
- Gerontology/Aging .......................................................... 483-1410
- Human Services ............................................................. 483-1410
- Law Enforcement (OC 224) ............................................ 483-1570
- Massage Therapy ............................................................ 483-1410
- Medical Assistant .......................................................... 483-1410
- Medical Assistant .......................................................... 483-1410
- Paramedics .................................................................. 483-1410
- Radiation Therapy Technology ....................................... 483-1410
- Radiologic Technology .................................................... 483-1410
- Respiratory Therapy ......................................................... 483-1410
- Sigh Language ................................................................. 483-1410
- Social Work .................................................................. 483-1410
- Surgical Technology ........................................................ 483-1410

**Technology Careers (GVT 220)** .............................................. 483-1336
- Apprentice Programs ........................................................ 483-1336
- Architectural Drafting ...................................................... 483-1337
- Art .................................................................................. 483-1476
- Automotive/Auto Body ..................................................... 483-1336
- Aviation (Airport)
  - Airframe Maintenance ................................................ 483-1406
  - Electronics ................................................................ 483-1406
- Flight Training .................................................................. 483-1406
- General Maintenance ....................................................... 483-1406
- Instrument Repair ............................................................ 483-1406
- Powerplant Maintenance .................................................. 483-1406
- Simulator Training ............................................................ 483-1406
- Building Maintenance ...................................................... 483-1404
- Building Trades ............................................................... 483-1361
- Civil Technology ............................................................... 483-1396

### Community and Continuing Education Division

**Community Education and Services (OC 207)** ..................... 483-1179

**Continuing Professional Education (CB 109)** ..................... 483-1414

**Contracted Training Services (CB 101)** ............................... 483-1965

**Instructional Services (CB 210)** .......................................... 483-1280

**Physical Fitness and Wellness (GVT 354)** ........................... 483-1227

**Facilities Rentals (CB 110)** .................................................. 483-1861

**Extension and Community Education (Learning Centers)** ... 483-1860

**International Programs** .................................................... 483-1006

**Japan Adventure/Japan Horizon (QUI 226)** ......................... 483-1006

### Liberal Studies Division

**Military Science/ROTC (AAS & 110)** .................................. 483-1015

**Communication (AAS 211)** ................................................. 483-1040
- Foreign Language ........................................................... 483-1040
- Linguistics .................................................................... 483-1040
- Speech ........................................................................... 483-1040
- Writing .......................................................................... 483-1040

**Humanities and Performing Arts (AAS 235)** ....................... 483-1018
- English/Literature .......................................................... 483-1019
- Humanities (History, Philosophy, Religion) ...................... 483-1018
- Performing Arts (Dance, Music, Theater) ......................... 483-1018

**Math and Computer Science (AAS 408)** ............................... 483-1087
- Applied Math .................................................................. 483-1087

**Computer Science** ............................................................ 483-1087
- Statistics ......................................................................... 483-1087
- Transfer Math .................................................................. 483-1097

**Science (AAS 408)** ............................................................ 483-1092
- Anatomy ......................................................................... 483-1092
- Biology/Molecular Biology .............................................. 483-1092
- Chemistry ...................................................................... 483-1092
- Environmental Science .................................................. 483-1092
- Geology .......................................................................... 483-1092
- Geoscience ..................................................................... 483-1092
- Integrated Science .......................................................... 483-1092
- Mathematics ................................................................... 483-1092
- Physics ............................................................................ 483-1092

**Social Sciences (AAS 353)** .................................................. 483-1126
- Economics ....................................................................... 483-1126
- Geology .......................................................................... 483-1126
- Geography ...................................................................... 483-1126
- Political Science/Government ......................................... 483-1126
- Psychology/Education ..................................................... 483-1126
- Sociology/Anthropology .................................................. 483-1126

**Public Safety (GVT 250)** ..................................................... 483-1500
- TDD ............................................................................... 483-9916

### Student and Academic Support Division

**Athletics (TH 103)** ............................................................. 483-1524

### Enrollment Services

- Counseling (AAS 103/SPS 208) ........................................... 483-1191/1184
- Advising Center (AAS 102) .............................................. 483-1904
- Disability Support Services (SPS 208) ............................ 483-1207
- TDD ............................................................................... 483-1218/1207
- Native American Leadership Courses (SPS 102) ............. 483-3602
- Student Development Courses (SPS 208) ......................... 483-1184
- Women's Resource Center (SPS 260) .............................. 483-1199
- Entry Services (SPS 104) ............................................... 483-1266
- Admissions (GVT 252) .................................................... 483-1200
- Limited English Proficiency (SPS 104A) ......................... 483-1207
- Minority Outreach and Recruitment (SPS 103) ............... 483-9755
- Native American Leadership Program (SPS 102) .......... 483-9803
- Office of the Registrar (SPS 104) .................................... 483-1265
- Financial Aid (SPS 112) ................................................. 483-1236
- Veteran's Services (SPS 114) .......................................... 483-1309

### Honors (SPS 215)
- Learning Center ................................................................ 483-1162
- Instructional and Student Support
  - Library Information Services (OC 231) ......................... 483-1167
  - Tutorial Services (SPS 201) ......................................... 483-1300
- Media Services (ACF 108) .............................................. 483-1672
- Interactive Learning Center (OC 209) ............................. 483-1566
- Telecourse Hotline (ACF 108) ........................................ 483-1695
- Telelearning (AOF 106) .................................................. 483-1672
- Student Life (GVT 200E) ................................................ 483-1285

### Language Skills (AAS 309E)
- Learning Center .............................................................. 483-1061
- Limited English Proficiency Courses (SPS 104A) .......... 483-1061

### Math/Science (AAS 309JJ)
- Math Lab (AAS 309) ....................................................... 483-1073
ACADEMIC CALENDAR

Fall Semester 1997

Classes Begin August 21*
Labor Day September 1
Thanksgiving November 27–
November 30
Last Day of Classes December 14*

For an up-to-date academic calendar for Fall Semester, and for start and end dates for 1998 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 1-517-483-1630

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

* Dates subject to change
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 Programs 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.

GENERAL ADMISSION PROCEDURES

Procedures for Completing the Admissions Application

1. Complete all items requested on the application for admission.
2. Attach the nonrefundable $10 application fee (check or money order made payable to Lansing Community College) to the application.
3. International applicants must follow the procedures outlined under International Applicants.
4. Applicants in high school must follow the procedures outlined under Dual Enrollment Program or Special Admission Program.
5. Nonpublic home school applicants must follow the procedures outlined under the Nonpublic Home School Program.
6. Guest students must follow the procedures outlined under Guest and International Guest Applicants.

APPLICATIONS MAY BE DELIVERED TO THE ADMISSIONS OFFICE LOCATED IN THE GANNON VOCATIONAL-TECHNICAL CENTER IN ROOM 232. ITEMS SHOULD BE MAILED TO: 1111-ADMISSIONS OFFICE, LANSING COMMUNITY COLLEGE, PO BOX 40013, LANSING, MI 48901-7216. FOR ADDITIONAL INFORMATION CALL (517) 485-1900.

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).

BASIC SKILLS ASSESSMENT AND ADVISING FOR STUDENT SUCCESS

General Information

Lansing Community College cares about student success and believes that school or job success depends on basic skills: reading, writing, math, computing, communicating, critical thinking, and study skills.

Many courses at LCC have minimum basic skill level requirements in reading, writing, and/or math which must be met before a student can enroll in those courses. Students establish basic skill levels by taking a series of placement tests, or by completing specific courses or degrees at LCC or other accredited institutions. Once basic skill levels are established, they become a part of a student's permanent academic record at LCC.

When a student attempts to enroll in a course with basic skill levels, his or her own levels will be checked to make certain that he or she is ready to enter the course and be successful. Students should be aware that these levels must be met before they will be allowed to register for the course. For this reason, students should check the BASIC SKILLS REQUIREMENTS listed in the Class Schedule before trying to register for any course. If a student's current levels are not high enough to register for courses(s) in his or her program of study, LCC faculty advisors will discuss other course options that are designed to improve reading, writing, and/or math skills.

Where to Find Information About Basic Skill Levels

Specific course basic skill level information is available in several places. Up-to-date levels are found in the current Class Schedule. Other sources, which are less frequently revised, are the College Catalog and individual course syllabi that are available from the department offering the course(s). As the College moves its printed materials into electronic form, they will be linked to the College's Home Page on the World Wide Web. The URL is [http://www.lansing.edu](http://www.lansing.edu).

Where and When to Take the Tests

Basic skills assessment is available for new students during the S.T.A.R.T. (Student Testing and Advising Registration Time) Program, which takes place at the beginning and/or end of each semester. For more information about S.T.A.R.T., call (517) 485-5393.

Most returning students take the reading, writing, and/or math test prior to registering for courses with basic skill prerequisites. Testing is available at the Learning Center, Room 309, Arts and Sciences Building, Monday through Saturday, whenever the Center is open. Call (517) 485-1060 for hours.

What the Tests Are Like

Reading, writing, and some math tests are on computers and are not timed. They are adaptive, which means that the computer selects each question based on whether the student answered the previous question correctly, branching up or down, getting more difficult or easier. The computer draws from a large pool of questions, but students only have to answer 20. The tests used to assess college-level math skills are computer-based tests. Students should allow three hours to complete all basic skills assessment tests.

The ReTest Policy

If a student wants to retest more than once in a semester, he or she must consult with a coordinator in the Learning Center (Room 309, Arts and Sciences Building).

Academic Advising Services

Faculty advisors will explain LCC placement test scores, determine waiver eligibility, help students plan class schedules, and discuss curriculum choices at LCC. Students may already have been granted reading, writing, and/or math level waivers based on past LCC classes, successful completion of specific classes, or degrees completed at LCC or other colleges that have been transferred into LCC. In addition, students may be eligible for a waiver if they achieved specific scores on national achievement tests, such as the ACT or SAT. Students should bring copies of standardized test results or transcripts from other colleges to review with a faculty advisor in the Counseling and Advising Center (Room 103, Arts and Sciences Building), if they have not already requested a transfer credit evaluation through the LCC Registrar's Office.

Advisors can also provide students with other college information or make referrals to other college personnel when appropriate. Students are encouraged to visit the on-campus Counseling and Advising Center (Room 103, Arts and Sciences Building) where no appointments are necessary, or to attend one of the special off-campus Learning Center advising sessions. The phone number for the Counseling and Advising Center is (517) 485-1934.

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 Admissions Office for further information by calling (517) 483-1254, or writing 1111-ADMISSIONS OFFICE, LANSING COMMUNITY COLLEGE, PO BOX 40010, LANSING, MI 48901-7210.

- Court and Conference Reporting, Associate in Business
- Dental Assistant, Certificate of Achievement
- Dental Hygienist Program, Associate in Applied Science
- Diagnostic Medical Sonography, Associate in Applied Science
- Fire Academy, Certificate of Completion
- Medical Assistant, Certificate of Achievement
- Mid-Michigan Police Academy, Certificate of Completion
- Music Commercial Performance, 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
- Radiation Therapy, Advanced Standing, Certificate of Achievement
- Radiation Therapy, Associate in Applied Science
- Radiologic Technology Program, Associate in Applied Science
- Respiratory Therapist, 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 requirements 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-ADMISSIONS OFFICE, LANSING COMMUNITY COLLEGE, PO BOX 40010, LANSING, MI 48901-7210.

General admission to the College for all types of visas requires applicants to: (1) be at least 18 years old, (2) provide proof of competency in the English language, and (3) 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, $10 application fee, 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 or Assistant Director of Entry Services
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. Submit an official high school transcript once each academic year;
4. Mail or bring the application, the nonrefundable $10 application fee, letter of authorization, and transcript to the LCC Admissions Office prior to enrolling in classes.

Special Admission Program

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.

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. Mail or bring the Special Admission Supplemental Application(s), the nonrefundable $10 application fee, and transcript to the LCC Admissions Office prior to enrolling in classes.

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:
1. Be a student attending a nonpublic home school which is registered with the Michigan Department of Education under the Nonpublic School Act, Public Act 302, PA 1921 as a home school and provide verification of registration;
2. Be at least 14 years of age prior to applying for the program.

Application Procedures for the Nonpublic Home School Program

Applicants must:
1. Applicants 15 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 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 an Admissions Counselor to discuss the student’s educational plan each semester.

1997-98 Catalog Lansing Community College www.lcc.edu
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 and the nonrefund-
able $10 application fee to the LCC Admissions Office prior to enrolling in
classes.

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 pri-
mary 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 and the nonrefundable $10 application
fee to the Admissions Office prior to enrolling in classes.

APPEAL PROCESS FOR DENIAL OF COLLEGE ADMISSION

Applicants denied admission to the College may appeal the denial. The deci-
sion 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 fol-
lowing semester. The appeal process shall consist of the following steps:

STEP 1: Admissions Counselor or Admissions Staff Member

If an Admissions Counselor or staff member denies admission to an appli-
cant, the Admissions Counselor or staff member shall provide the applicant with a
copy of the appeal process. If the applicant wishes to appeal the denial, the
Counselor or staff member shall arrange an appeal meeting with the Director or
Assistant Director of Entry Services within two working days of the denial.

STEP 2: Director or Assistant Director of Entry Services

(If admission was originally denied by the Director or the Assistant Director of
Entry Services, the applicant may move directly to Step 3 of the appeal pro-
cess.) The applicant must submit his or her appeal in writing to the Director or
Assistant Director of Entry Services at least one working day prior to the appeal
meeting. The Director or Assistant Director shall render a decision to the appli-
cant 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 or Assistant
Director shall discuss Step 3 of the appeal process with the applicant. If the appli-
cant wishes to appeal the denial, the Director or Assistant Director 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 Chair-
person 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 fol-
lowing members:

A. The Dean of Student and Academic Support (Chairperson) or his or her
designee
B. A member of the teaching faculty
C. A counselor
D. Appeals Coordinator or his or her designee (as recorder and voting
member)

The appeals process for international students shall have the following modifi-
cation in membership:

STEP 1: International Admissions Specialist or his or her designee
STEP 2: Director of Assistant Director of Entry Services
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 voting
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 main-
tained 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 pro-
vides 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 200F in the Gannon Vocational-Technical Center. There is no fee for this
service.

FINANCIAL AID INFORMATION

The Student Financial Aid/Veterans Services Program at Lansing Community
College assists students, who demonstrate need, in meeting some of the college
costs that cannot be met by personal or family resources. An objective method
of need determination approved by the federal government is used. Some schol-
arships are available that are based on academic achievement or talent.

Students are eligible to apply for financial assistance if they have graduated
from high school, have completed a GED, or have demonstrated, through test-
ing, the ability to benefit from courses or programs at Lansing Community College.
They must enroll in LCC programs of study leading to a one-year certificate,
two-year degree, or transfer program, and must be a U.S. citizen or eligible non-
citizen. Enrollment in a program of study abroad that is approved for credit by
Lansing Community College is considered to be enrollment at Lansing
Community College for purposes of a student applying for federal student financial
assistance.

SOURCES OF FINANCIAL ASSISTANCE

Financial aid programs are funded from federal, state, college, and private
sources. 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.”

Scholarships

Money that does 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 Scholarships are awarded to outstanding district high
  school graduates.
- Divisional Scholarships are awarded to outstanding students who are resi-
  dents of the district and who apply directly to the College division or
  department in which the student wishes to study. Students may contact the
  Student Financial Aid/Veterans Services Office for information.
- Athletic Scholarships are awarded through the Athletic Department. Tal-
  ented athletes should contact coaches in their respective sport areas.
- Michigan Competitive Scholarships are based upon a qualifying examina-
  tion 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 organi-
  zations. A Scholarship and Financial Aid Booklet is available in the Office
  of Student Financial Aid/Veterans Services giving 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.
Grants
Money that does not have to be paid back, usually based upon need.
• Federal Pell Grants are based on need. Students must file an LCC Financial Aid/Veteran Services Form and a Free Application for Federal Student Aid. The Office of Student Financial Aid/Veteran Services must receive the results of this application to award the grant.
• Federal Supplemental Educational Opportunity Grants are awarded to ‘high’ need students by submitting the same application forms as for 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 college 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’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 Community Education and Services Department at (517) 483-1180.

Loans
Money that must be repaid beginning six months after graduation or enrollment of less than six (6) credits, with the exception of the PLUS loans which must begin repayment upon 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 Student Financial Aid/Veteran Services 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, an LCC Financial Aid 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. Application for William D. Ford Direct PLUS loans are available in the Student Financial Aid/Veteran Services Office.
• 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 Student Financial Aid/Veteran Services Office.

Employment
Job opportunities may be available to assist students in earning money to meet part of their educational expenses. Employment at the College is based upon skills, abilities and not necessarily upon need.
• Federal Work Study is based upon need. Students must submit an LCC Admissions Application, the Financial Aid Application Form, and a Free Application for Federal Student Aid to be considered.
• Michigan Work Study is awarded to needy students to help meet expenses while attending college. Students may be employed by the College, public nonprofit organizations, private business and industry.
• Career and Employment Services at LCC posts federal work study jobs, student employed 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
Funds are available for certain students. The College’s Student Financial Aid/ Veteran Services 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. 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 submitting the FAFSA:
1. The completed FAFSA form may be submitted electronically through the Federal Aid Web located in the Student Personnel Services Building, Student Financial Aid/Veteran Services Department. Process time is four to ten working days after the student enters the application. Call (517) 483-1296 to schedule an appointment. Staff is available to assist students with filling the application. The Student Aid Report (SAR) results are then mailed to the student.
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.

Students whose results are received by April 15 will have their Award Letter no later than May 15. Application for Federal Aid must be completed each academic year that a student plans to attend college.

To make application for financial assistance at the College, additional forms must be submitted:
1. New students must complete the LCC Application for Admission and the Financial Assistance form and return them to: 1120 STUDENT FINANCIAL AID/VETERAN SERVICES, LANSING COMMUNITY COLLEGE, 430 N. CAPITOL, PO BOX 40010, LANSING, MI 48901-7210. New students must complete the Free Application for Federal Student Aid (FAFSA) and submit the application to the federal processor.
2. Returning students must complete the LCC Financial Assistance Form and submit it to the Office of Student Financial Aid/Veteran Services, and must complete the Free Application for Federal Student Aid (FAFSA) and submit it to the federal processor.

William D. Ford Federal Direct Student Loans (Subsidized, Unsubsidized and PLUS) are available by completing the abovementioned forms and the loan application form. Loan applications are available at the Student Financial Aid/Veteran Services Office.
LCC Board of Trustees Scholarship forms are available through district high school counseling offices. Scholarship forms are also available at the LCC Admissions Office and the Student Financial Aid/Veteran Services Office.
Divisional Scholarships are available directly from the respective College division or department of the student’s major area of study.
The LCC Foundation has scholarships available through the Student Financial Aid/Veteran Services Office, or students may call the LCC Foundation Office at (517) 483-1885.
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 Admissions Office and the LCC Financial Assistance Application to the Office of Student Financial Aid/Veteran Services, and when the Office of Student Financial Aid/Veteran Services receives the results of the federal application for student financial assistance. 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 required by the Office of Student Financial Aid Veteran Services.

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 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 Office of Student Financial Aid Veteran Services.

EXPECTED FAMILY CONTRIBUTION

If a student is a dependent student, the College assumes that parents have the first 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 need to borrow against future earnings.

If a student is a self-supporting or independent student, 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 also include the need to borrow against future earnings.

SELECTION CRITERIA

Students are selected to receive 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 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.

The Office of Student Financial Aid Veteran Services may be required to verify information provided on the Financial Assistance 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. If a student enrolls for fewer than 12 credits, his or her award is prorated to meet his or her enrollment. 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. A 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. Students need only be enrolled for six credits to be considered full-time for purposes of financial aid, five credits to be considered three-quarter time, and three credits to be considered half-time. Enrollment for less 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. Students who enroll in short courses and have a Federal Direct Student Loan are required to be enrolled in six credits of semester-length courses in addition to any short courses.

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. Tuition and fees will be deducted from the financial aid during registration if sufficient funds are available and if tuition and fees are not paid by the student or other sources;
2. The student will receive an advanced financial assistance check during the first full week of classes, if the student is eligible; and
3. The student will receive the balance of grants, loans, or scholarships approximately 21 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 ADVANCE CHECK

Check Distribution

Checks are issued two times each semester at the Cashier’s Office if financial aid awards exceed the amount of tuition and fee charges. Students use this money for books, supplies, transportation, and room and board. Advance checks are printed during the first two weeks of the semester. Final checks are printed by the 14th day of the semester. Students who receive an advance check normally receive a final check.

Advance Checks

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 financial assistance 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.

COLLEGE WORK STUDY

If a student has been offered Federal Work Study eligibility, the student must first secure employment through the Career and Employment Development Services Office (Room 211, Gannon Vocational-Technical Center) prior to receiving these funds which will be disbursed on a regular hourly salary payment schedule.

TUITION REFUNDS

Tuition refunds for financial aid students are based on federal regulations. Refunds for first-time students who completely withdraw are made through the first 60 percent of the semester. Students who are not first-time students and completely withdraw will have refunds through the first 50 percent of the semester. Tuition will be refunded in the following order for any programs received that semester:

12

1997-98 Catalog Lansing Community College www.lcc.edu
a. To outstanding balances on Federal Direct Loans
b. To Federal Pell Grant Awards
c. To Federal SEOG awards
d. To state financial aid awards
e. To institutional financial aid awards
f. To private or public donor awards
g. To the 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 those 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 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.
3. Credit earned is defined as a grade of 1.0 or higher.
4. Grades of W, I, Z, N and F are considered attempted and not earned for determining financial aid satisfactory academic progress.

Credit attempted includes all repeated courses.

Students must complete all requirements for their program or associate degree 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, the Federal Carl Perkins 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 their first semester who do not make satisfactory academic progress will receive an academic warning letter, and remain eligible for an additional semester of assistance.

Federal regulations state that an Academic Progress Policy must include a review of all periods of enrollment, whether or not aid was received. Students with more than one but less than five graded semesters at Lansing Community College who have failed to maintain satisfactory academic progress in accordance with GPA or completion percent, may be allowed to re-enroll on financial aid under an educational contract with Project STAY. While on a STAY contract, a student will be considered to be making satisfactory academic progress for financial aid programs as long as the student abides by the terms of the educational agreement, or until the student has raised his or her cumulative grade point average to 2.0 or greater and has at least 70 percent completion of all credit hours attempted, but not beyond the completion of the fifth semester.

Students who do not successfully complete the semester of their educational contract with Project STAY will have their financial aid canceled, subject to the appeals process described below.

After five semesters of enrollment, students with GPAs lower than 2.0, and students who have earned less than 70 percent of credit hours attempted, will have their financial aid eligibility canceled. Eligibility for financial aid may be automatically reinstated after a student completes, financed with his or her own resources, sufficient credit hours to raise his or her GPA to a 2.0 or above and credit completion to 70 percent or higher subject to maximum eligibility. (See Maximum Eligibility section.)

Appeal of Unsatisfactory Academic Progress

A student failing to maintain satisfactory academic progress and placed on probation or terminated from financial aid, may appeal this action. All appeals must be submitted in writing to the office of Student Financial Aid. The appeal must 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.

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 will not be awarded 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 timeframe:

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 transfer credits, if any. Additionally, some students may have had to complete prerequisites or developmental course work in preparation for courses required in their major, and other students had to study English as a second language (ESL) before completing regular program requirements. These credits are not included 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 loss 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 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 be in good standing and 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.

STUDENT FINANCIAL AID COMMITTEE

A college-wide committee on student financial assistance has been established at Lansing Community College. The membership of this committee is as follows:

1. The Director of Student Financial Aid/Veteran Services (Chairperson)
2. One faculty member from each of the instructional divisions to be appointed by the appropriate dean
3. Two students to be appointed by the Director of Student Life
4. The Director of Student Life
5. The Business Manager (or his or her designee)
6. The Dean of Student and Academic Support Division (or his or her designee)
7. Two counselors from Counseling Services

The functions of this committee are:

1. To assist in the development of programming and procedure with the Office of Student Financial Aid/Veteran Services of the College;
2. To assist in the evaluation of existing procedures and programming within the Office of Student Financial Aid/Veteran Services of the College;
3. To assist in the area of communications about the student financial assistance program and to provide input from the various sub-populations of the College.

VETERANS INFORMATION

Veterans Services helps veterans file applications for education, counseling, loans, tutorial assistance, and 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 Office of Student Financial Aid/Veteran Services 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:

<table>
<thead>
<tr>
<th>LEVEL OF ATTENDANCE</th>
<th>REQUIRED CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full time</td>
<td>Minimum of 12</td>
</tr>
<tr>
<td>Three-quarter time</td>
<td>9, 10, or 11</td>
</tr>
<tr>
<td>Half time</td>
<td>6, 7, or 8</td>
</tr>
</tbody>
</table>

After enrollment, veterans should direct their inquiries concerning eligibility to the Office of Student Financial Aid/Veteran Services 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 Servicemember’s Opportunity College.

In addition, the College participates in the Army Reserve Officers Training Corps, the 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 56.1775 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 until after the semester in which the student regains academic good standing (see Academic Standing Scale).

Certification Policy for Veterans Administration

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 “D,” “F,” “W,” or “FW” or “Z” for course work pursued. In this event, the College will report the first day of the certified attendance period as the last date of attendance, unless the benefit recipient provides the Lansing Community College Veterans Office a written and signed statement indicating a different last date of 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 Class 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.

ALTERNATIVE DELIVERY

Lansing Community College offers a highly diversified program of evening, Saturday, and Sunday courses on campus and at off-campus learning centers for those who choose to attend classes outside of regular daytime class sessions. Lansing Community College also offers packaged courses, short-term courses, telecourses, interactive television courses, and a weekend degree. See the current Class Schedule for more information.

TUITION AND FEES

Residency

1. 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:

   a. 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.

   b. The student is married and has resided within the LCC district at least six months immediately prior to the first day of the semester.

   c. 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.

2. The following applies to students 18 years of age or older:
   a. The student has resided within the LCC district at least six months immediately prior to the first day of the semester.
   b. 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.

II. Proof of Residency

All students must provide proof of residency at the time of admission and registration (Michigan House Bill No. 4169, 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.

- 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
- Paid property tax receipts
- Rental or lease agreement
- 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 nonresident 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.

*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. A 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 859, 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

Upon registering, a student shall be notified of his or her residency status. 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:

- TUTION PER CREDIT HOUR
  - Resident Students: $42.00
  - Nonresident Students: $72.00
  - Out-of-State Students: $101.00
  - International Students: $101.00

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

FEES FOR ALL STUDENTS

- Application Fee (new students and guest students, nonrefundable): $10.00
- Registration Fee (all students, each semester, nonrefundable): $20.00
- Activities Fee (each semester):
  - 25–6 credit hours: $1.50
  - 7–11 credit hours: $4.50
  - 12 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 Class Schedule booklet each semester.

*TUTION 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 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 Variable Date Drop Form in the Office of the Registrar 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
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.
Change credit/audit status Prior to end of course meeting

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

EIGHT-WEEK - LESS THAN 16-WEEK COURSES
100% Refund* During the first week of the course
50% Refund (at tuition only): During the second week of the course
Drop with no course shown During the second week of the course
Change credit/audit status: Prior to the end of the fourth week of the course

*The 100 percent refund period for variable date courses offered through the Division of Community Services and Continuing Education is 48 hours notice prior to the start of the course. Questions should be directed to the department offering the course.

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 Class 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 completed by the student so that the student’s record in the Office of the Registrar may be accurately maintained:
1. Pick up a Drop-Add Form during the registration process or at the Office of the Registrar.
2. Fill out the form completely with information requested.
3. Return the form to the registration assistant or to the Office of the Registrar 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.

REPEAT COURSES
When repeating a course, the highest grade earned will be used in computing the LCC cumulative grade point average. Both the repeated and repeating courses will appear on the academic record and be appropriately identified. An updated copy of the student’s academic record will be mailed to the student when the repeat grade has been processed. A student must indicate that he or she is repeating a course when registering.

AUDITING
A student who desires to attend a class regularly, but does not wish to take final examinations or receive an achievement grade and credit, may register as an auditor. All students have the option of changing from “credit” to “audit” or from “audit” to “credit” through the end of the sixth week of the semester. 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. 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 Office of the Registrar.

WITHDRAWAL

I. Student-Initiated Withdrawal
A. If a student finds it necessary to withdraw from the College, he or she should contact the Office of the Registrar 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, 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 Office of the Registrar.
D. If a student withdraws from a semester-length class after the end of the sixth week of the semester, a grade is issued by the instructor at the time of the withdrawal. A grade will be placed on the final grade report and recorded on the academic record.

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 academic withdrawal.
An administrative withdrawal may be initiated by a classroom instructor in accordance with written procedures established by each department and with the 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 Office of the Registrar.
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. At this time, the instructor may recommend that the student withdraw from the particular course. If the student chooses not to withdraw, the instructor may initiate an administrative withdrawal through the Office of the Registrar.
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 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 recommendation of the appropriate departmental chairperson, may initiate an
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. 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. Wherever 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 23 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 not recorded on the official academic record.

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 900 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 published in the College Catalog and the Class 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:

<table>
<thead>
<tr>
<th>COLLEGE STANDARD</th>
<th>NARRATIVE EQUIVALENT</th>
<th>RECOMMENDED</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.0</td>
<td>Excellent</td>
<td>91% to 100%</td>
</tr>
<tr>
<td>3.5</td>
<td>Good</td>
<td>86% to 90%</td>
</tr>
<tr>
<td>3.0</td>
<td></td>
<td>81% to 85%</td>
</tr>
<tr>
<td>2.5</td>
<td>Satisfactory</td>
<td>76% to 80%</td>
</tr>
<tr>
<td>2.0</td>
<td>Poor</td>
<td>71% to 75%</td>
</tr>
<tr>
<td>1.5</td>
<td></td>
<td>66% to 70%</td>
</tr>
<tr>
<td>1.0</td>
<td></td>
<td>60% to 65%</td>
</tr>
<tr>
<td>0.0</td>
<td>Failure</td>
<td>0% to 59%</td>
</tr>
</tbody>
</table>

*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 satisfied 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. An "I" (Incomplete) designation is temporary. It is not a grade. An instructor may approve a student-initiated request for an incomplete if 80 percent of the course work has been completed and if, in the instructor's judgment, there was good reason why the student could not complete the balance of the required work during the term of enrollment. "Incomplete" will not be counted toward the establishment of an earned grade point average (GPA) or toward graduation from Lansing Community College. If the request for an incomplete is not approved, the grade earned consistent with the course requirements will be assigned when the final grades are submitted.

All incompletes must be completed by the end of the next regular semester or earlier if an earlier deadline is established by the instructor. Extensions in either case must be requested in writing by the student and approved in writing by the instructor and department prior to the deadline date.
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, no grade will be recorded on the student's academic record. For withdrawals after the sixth week of the semester, a final grade which is consistent with the course requirements will be assigned by the instructor.

COMPUTING GRADE POINT AVERAGE

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

<table>
<thead>
<tr>
<th>NUMERICAL GRADE</th>
<th>HONOR POINTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.0</td>
<td>4.0</td>
</tr>
<tr>
<td>3.5</td>
<td>3.5</td>
</tr>
<tr>
<td>3.0</td>
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<td>1.0</td>
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<tr>
<td>0.0</td>
<td>0.0</td>
</tr>
</tbody>
</table>

"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 honor points. To compute the grade point average (GPA), the number of honor points earned is divided by the number of credit hours taken during the semester.

CREDIT/NO-CREDIT GRADING (P-Z)

The credit (P)-no credit (Z) grading system has been established as a departmental option. This system is reserved for special course offerings where a credit/no-credit 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 credit/no-credit 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 (credit) 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 (no credit) 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.

GRADE REPORTS

An official academic grade report is 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 forms are then forwarded to the Office of the Registrar for posting on the student's permanent academic record. Completed grade change forms are not to be carried by the petitioning student to the Office of the Registrar and will not be processed if they are so received. Students will be officially notified in writing by the Office of the Registrar after a grade change has been completed.

ACADEMIC STANDING POLICIES

Table for Determining Academic Standing

Following is the table for determining your academic standing at Lansing Community College. To use this table do the following:

1. On your grade report or academic transcript, locate your cumulative grade point average (GPA) and the total number of credits completed.
2. Find your position in the left-hand column of the table according to your total number of credits.
3. Read across the page to your right until you locate the column which includes your current cumulative grade point average (GPA). This column heading indicates whether you are in the Good Standing Range, the Warning Range, or the Withdrawal Range.

Definitions of the various academic ranges at Lansing Community College are listed immediately after the table. Please refer to these definitions for an explanation of your academic status.

NOTE: Students in certain selective admission programs may be placed on program probation or receive academic warning for deficiencies in their clinical performance even though the student's cumulative GPA may be within the overall College's Good Standing Range.

<table>
<thead>
<tr>
<th>SEMESTER CREDITS COMPLETED</th>
<th>GOOD STANDING CUMULATIVE GPA</th>
<th>WARNING RANGE CUMULATIVE GPA</th>
<th>WITHDRAWAL RANGE CUMULATIVE GPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-7</td>
<td>1.86 and above</td>
<td>1.00 - 1.86</td>
<td>0.99 or less</td>
</tr>
<tr>
<td>8</td>
<td>1.83</td>
<td>1.01 - 1.85</td>
<td>1.00</td>
</tr>
<tr>
<td>9</td>
<td>1.83 *</td>
<td>1.04 - 1.88</td>
<td>1.03 *</td>
</tr>
<tr>
<td>10</td>
<td>1.90 *</td>
<td>1.06 - 1.89</td>
<td>1.05 *</td>
</tr>
<tr>
<td>11</td>
<td>1.90 *</td>
<td>1.09 - 1.89</td>
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<td>1.91 *</td>
<td>1.14 - 1.90</td>
<td>1.13 *</td>
</tr>
<tr>
<td>14</td>
<td>1.92</td>
<td>1.16 - 1.91</td>
<td>1.15</td>
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<tr>
<td>15</td>
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<td>1.94 *</td>
<td>1.28 - 1.93</td>
<td>1.27 *</td>
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<tr>
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<td>1.95</td>
<td>1.30 - 1.94</td>
<td>1.29 *</td>
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<td>1.98 *</td>
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<td>1.61</td>
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<td>2.00 *</td>
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<td>1.65 *</td>
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<td>36</td>
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<td>1.69 - 1.99</td>
<td>1.68 *</td>
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<tr>
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<td>2.00 *</td>
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<td>1.70 *</td>
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<td>38</td>
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<td>1.73 *</td>
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<td>39</td>
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<td>1.83 - 1.99</td>
<td>1.82 *</td>
</tr>
<tr>
<td>43</td>
<td>2.00 *</td>
<td>1.86 - 1.99</td>
<td>1.85 *</td>
</tr>
</tbody>
</table>
Satisfactory Progress

Good Standing Range: A student whose cumulative grade point average is in the Good Standing Range is making satisfactory academic progress.

Warning Range: A student whose cumulative grade point average is in the Warning Range is making minimum satisfactory academic progress. This student is strongly advised to consult with the course instructor or department chair or lead faculty member, see a counselor, or request a tutorial. Information about services to support student learning is available in The Student's Guidebook.

NOTE: Veterans’ benefits recipients and students receiving financial aid should refer to the Financial Aid Information section of this catalog for additional information regarding academic progress.

Unsatisfactory Progress

Withdrawal Range: The academic progress of students is monitored each semester by the College using the Table for Determining Academic Standing. Students who fail to meet the academic standards of the College, that is, when their cumulative grade point average falls into the withdrawal range, may be academically dismissed for at least one semester before being considered for readmission. For further information, contact the Counseling Services Department at (517) 483-1164.

STUDENT RECORDS

STUDENT TRANSCRIPTS

The Office of the Registrar 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 College seal and signature of the Registrar. The transcript includes courses waived, courses attempted and completed, courses and credits transferred, credits awarded for experiential learning, credit hours, honor points, Lansing Community College grade point averages, associate degrees, and certificates of achievement 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 Office of the Registrar. Transcript requests require two working days to process, and a $2.00 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 receive all educational records directly related to the student. Upon presentation of a picture identification and a written request from the student to the Office of the Registrar in Room 104 of the Student Personnel Services Building, 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 Office of the Registrar by the end of the first week of the semester. 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 and place of birth
   c. Dates of attendance
   d. Enrollment status
   e. A record of 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


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 or 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 a crime of violence if 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 506(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 Office of the Registrar 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. 20228.

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.

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 official college seals and that are mailed directly to the Lansing Community College 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 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.

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 equivalent to a corresponding Lansing Community College course or an elective credit if the college courses do not have a department or area similar to the courses on incoming transcripts.

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, 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 2.0–1.5 or "D". Waiver of a course requirement does not provide credit for the 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 change in the evaluation if he or she feels that a course he or she is taking at this college 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 evaluation specialist in the Admissions Office. Verification of the change can be made through the Office of the Registrar.

Non-Accredited Institutions

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

1. The Office of the Registrar 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 Office of the Registrar 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 division 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 Office of the Registrar 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 Office of the Registrar, because there may be a difference in the evaluation.

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 Experimental Learning Processing Form from the Office of the Registrar, Student and Academic Support Building, (517) 485-1286.

NGTE: 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 veterans' 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 Experimental 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 Experimental Learning Processing Form to the Office of the Registrar, including an appropriate supporting documentation as possible. The student must also attach 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 transferable 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. This 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 Office of the Registrar 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 Lansing Community College.

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 Office of the Registrar.
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 Office of the Registrar 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), Advanced Placement Examination (AP), and the Defense Activity for Non-Traditional Education Support (DANTES). Students in need of information about these examinations should contact the Admissions Office.

GRADUATION REQUIREMENTS, CERTIFICATES, AND DEGREES

INSTITUTIONAL REQUIREMENTS FOR CERTIFICATES OF ACHIEVEMENT

Certificates of achievement are groups of designated courses in occupational areas. To receive a certificate of achievement 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 credit/no credit (P-Z) grading system. (See the Degree and Certificate Programs section of this catalog.)
2. Maintain a minimum grade point average of 2.0.
3. Earn toward graduation at least 10 semester credits in attendance at Lansing Community College.
4. File an application for graduation with the Office of the Registrar at least one semester preceding the semester of graduation.
5. Satisfy all general and specific requirements of Lansing Community College including the fulfillment of all financial obligations.

NOTE: Students seeking a certificate of achievement 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 credit/no credit (P-Z) grading system. (See the Degree and Certificate Programs section of this catalog.)
2. Maintain a minimum grade point average of 2.0.
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 including the fulfillment of all financial obligations.
6. File an application for graduation with the Office of the Registrar 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. Students who were enrolled at
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 in conflicts.
   - Describe and analyze how major ideas, issues, values, 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, contemporary, and ethical implications of scientific and technology.
   - Evaluate the impact of scientific and/or technological change on, for example, occupations; work, 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 citation, as appropriate to the purpose of the writing.
   - Produce effective writing, including summaries, reports, and analyses.

HOW STUDENTS CAN SATISFY LCC GENERAL EDUCATION CORE REQUIREMENTS

As of fall 1996, all new students, and any previously enrolled students following an LCC curriculum guide with an expiration date of summer 2001 or beyond, 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 in any of the following ways:

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 Learning Center, Room 306, Arts and Sciences 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)
   (Descriptions of these courses can be found in 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 151 Calculus I (4)
   - MATH 152 Calculus II (4)
   - MATH 201 Math for Liberal Arts (3)
   - MATH 253 Calculus III (4)
   - MATH 254 Introduction to Differential Equations (3)
   - MATH 259 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 Program (AP), the College Level Examination Program (CLEP), the Defense Activity for Non-Traditional Education Support (DANTES), 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)
   b. Science and Technology
      - ASTR 251 Introductory Astronomy (4)
      - BIOL 210 Natural Resource Conservation (4)
      - CHEM 135 Chemistry for Society (4)
      - CHEM 151/161 General Chemistry Lecture and Laboratory I (4)
      - CISP 230 Information Systems Technology and Problem Solving (3)
      - ISCI 121 Integrated Science for Education I (4)
      - ISCI 131 Integrated Science-Physics: The Science of the Water Planet (4)
      - MTR 220 Introduction to Meteorology (4)
      - PHYS 252/255 Physics I Mechanics and Laboratory (5/1)
   c. Speech Communication
      - SPCH 110 Oral Communication in the Workplace (5)
      - SPCH 120 Dynamics of Communication (3)
   d. Writing
      - ENGL 121 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 Communications (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), the Defense Activity for Non-Traditional Education Support (DANTES), or others as recognized by Lansing Community College.

6. For global perspectives and diversity, 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 OR CERTIFICATE OF ACHIEVEMENT

The student submits his or her Application for Diploma/Certificate to the Office
of the Registrar. It is important that the student attach copies of any authorized
course substitutions or waivers and a copy of the curricular guide he or she has
been following to the application. Transition students must also attach a copy of
the Curriculum Completion Plan form to the application.

1. If any requirements remain after initial review by the Office of the Registrar,
the student will be sent a Degree Audit Report along with an unofficial copy
of his or her transcript. Any exceptions to the courses listed on the audit
report must be noted on the form by the student’s departmental chairperson
or authorized representative, stamped by the departmental office, and
returned to the Office of the Registrar. A copy will be attached to the
Application for Diploma/Certificate. The student will be responsible for
completing the remaining courses unless a revised form is submitted to
the Office of the Registrar.

2. If no requirements remain after the initial review, the application will be sent
to the appropriate department and division for approval. When the appli-
cation is returned to the Office of the Registrar, the student is sent a
notification of status letter.

The application is held on file until the close of the current semester. Applica-
tions for students who do not successfully complete the requirements are held
on file for up to one year until all requirements are met. It is important that a
student make application for his or her degree at least one semester in advance of
graduation. The procedure outlined above may take a full semester to complete.
Soon after the end of the semester, an official copy of the student’s LCC tran-
script, noting the degree and date of completion, will be sent to the student. This
transcript is official notification that all course requirements have been met. Di-
plomas are mailed within two months after the last day of the semester.

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. The semester system require-
ments apply to them, and they must follow semester curricular guides.

Students who started degree or certificate programs at LCC prior to Fall
Semester 1993 and are continuing their studies on the semester system are con-
sidered 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 de-
partmental chairpersons.

Transition students must be on either the Quarter Option or the Semester
Option. No mixing of quarter and semester requirements is permitted. The op-
tions are described below.

Quarter Option: The Quarter Option is a Curriculum Completion Plan for com-
pleting unfulfilled quarter system requirements with semester credits and courses.
Transition students with fewer than 45 earned quarter credits (including those trans-
tered from another institution) toward a specific degree—or less than 50 percent
earned quarter credits toward a certificate—must choose the Semester Option.

Semester Option: The Semester Option is a Curriculum Completion Plan indi-
cating how quarter courses and credits will be applied to semester system
requirements. All transition students are eligible to choose the Semester Option.

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 cur-
ricular guides will expire 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 trans-
fer programs.)

REGULATION FOR 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, busi-
   ness, science, or applied science must be met.

3. The College’s General Education Core requirements, including demon-
   strated 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.

"Students who were enrolled at Lansing Community College prior to fall 1996,
and who are following an LCC curriculum guide with an expiration date of sum-
mer 2000 or before, are not required to satisfy the College’s General Education
Core Requirements. They must, however, complete a course in political science.
POLS 120, American Political System, or POLS 121, State and Local Government,
will satisfy this requirement for all degree programs with an expiration date of
summer 2000 or before. (LAB 218, Labor Relations, will satisfy this require-
ment for certain programs only as indicated on specific curriculum guides.)

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 asso-
   ciate 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, busi-
   ness, 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.

"For students who were enrolled at LCC prior to fall 1996, and who are fol-
lowing an LCC curriculum guide with an expiration date of summer 2000 or before,
the College’s requirement of completing a political science course is waived.

ASSURANCE OF QUALITY

Lansing Community College offers assurance—a guarantee—to its students,
prospective employers, and receiving transfer colleges, universities, and techni-
cal 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.

24
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.

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, called an Interim Due Process Suspension, will take effect immediately upon direction of 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 4116 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 alcholic 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 student activity 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.

1997-98 Catalog Lansing Community College www.lcc.edu
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 dependency, 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 swing 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/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, noninterference with College functions or activities, and identification of the sponsoring group or individuals. Under no circumstances are members of the College community to be forced to involuntary audiences.

Identification Cards

All Lansing Community College students are issued an identification card. Students are expected to show their I.D. card whenever they check out books at the College libraries, vote in student elections, 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 state, local, and federal governments.

Sec. 1. A person is guilty of a misdemeanor, punishable by a fine not exceeding $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 the person is in violation of the properly promulgated rules of the institution;
   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 not exceeding $100.00 and not more than $500.00, 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 functions 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 or 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 unauthorized 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

In compliance with the Michigan Clean Indoor Act, P.A. 158 of 1986, and in the interest of providing a safe and healthy environment for the College's students, employees, and visitors, smoking will not be permitted in Lansing Community College facilities.

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. Completing Student Evaluation Forms at the conclusion of each course. 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. Presenting suggestions regarding instructional quality to their instructors, their instructor's departmental chairperson or the instructor's divisional dean. These written or verbal suggestions are also reviewed by the College to improve instruction and assess instructional effectiveness.
3. 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. These 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 division.

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 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, field and other health related 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 its joint responsibilities, shared by the student body and the College, to uphold the principles of "due process" in all disciplinary action.

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.

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 procedures, 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 the 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 Dean of Student and Academic Support (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 ten (10) 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 Dean of the Student and Academic Support Division (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 the case 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 (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 changes 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, in 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 appear, 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 Dean of the Student and Academic Support Division 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 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.
What Constitutes Sexual Harassment?

Some examples that may constitute sexual harassment are:
- Subtle pressure for sexual activity
- Unnecessary physical brushes or touches
- Offensive sexual graffiti
- Repeated requests or pressure for dates
- Unwanted offensive contacts outside the workplace
- Disparaging sexual remarks about one's gender or sexual orientation
- Physical aggression such as pinching or patting
- Verbal sexual abuse disguised as fun
- Obscene gestures
- Offensive sexual jokes

These examples do not include all types of conduct that can constitute sexual harassment. Each situation must be considered in light of the specific facts and circumstances to determine if sexual harassment has occurred.

For the purpose of the above regulation, the College interprets “Unwelcome” to mean:
1. Conduct or communication which a reasonable person in a similar circumstance would consider unwelcome;
2. Conduct or communication which continues after notice is given that the conduct or communication is unwelcome.

Other notable laws and public acts that prohibit discrimination include:
1. Title VII of the Civil Rights Act of 1964, as amended and the 1992 Civil Rights Act which prohibits discrimination on the basis of race, color, sex, religion, or national origin.
2. Title IX of the Education Amendment of 1972, which prohibits discrimination on the basis of sex.
3. Americans with Disability Act (ADA) which prohibits discrimination on the basis of disability.
4. Age Discrimination in Employment Act (ADEA) which prohibits discrimination on the basis of age, 40 and over.

FILING EO/DISCRIMINATION COMPLAINTS

The guidelines/procedures below apply to LCC students and staff who bring formal complaints or desire to file a formal complaint regarding sexual harassment/discrimination. The investigation of these complaints will be handled through the Office of Equal Opportunity and Diversity Programs, 108 North House, telephone number (517) 483-1858.

I. Responsibility to Report

Sexual harassment/discrimination must be reported to the Director of Equal Opportunity. Prompt reporting of all complaints is very critical, since 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 60 (sixty) calendar days of the alleged incident. All complaints will be investigated.

II. Retaliation/Reprisal

It is unlawful for any individual (student or staff) 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/findings in any manner.

III. Receiving a Complaint

Students and staff who feel they are being sexually harassed or discriminated against should contact the Director of Equal Opportunity (517/483-1858). Complaint forms are available in the offices of College Human Resources, Divisional Deans, Vice Presidents and Equal Opportunity. Students and staff should then investigate or discuss the complaint with others. Confidentiality should be maintained by all involved in the complaint to protect the confidentiality and integrity of the fact finding process.

After receiving a complaint, the Director of Equal Opportunity may investigate the complaint or designate a person or persons who have been trained to investigate the alleged complaint.

A. Functions of the Investigation Team

1. To help educate the Lansing Community College faculty, staff, and students about sexual harassment/discrimination.

STUDENT AND STAFF SEXUAL HARASSMENT, NONDISCRIMINATION, AND EQUAL OPPORTUNITY POLICY AND PROCEDURES

Lansing Community College is an equal educational opportunity institution 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 education opportunity. The investigation of all sexual harassment and/or discrimination complaints will be handled through the Office of Equal Opportunity and Diversity Programs.

Sexual harassment/discrimination is unlawful and is not acceptable behavior on the College campus or at College-sponsored events off campus.

Sexual harassment is defined in the Michigan Elliot-Larsen Civil Rights Act (MCLA 37.2101, et seq., as amended) as follows:

"... Unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct or communications of a sexual nature when:

1. Submission to such conduct or communication is made a term or condition, either explicitly or implicitly to obtain employment, public accommodations or public services, education or housing.
2. Submission to or rejection of such conduct or communication by an individual is used as a factor in decisions affecting such individual’s employment, public accommodations or public services, education or housing.
3. Such conduct or communication has the purpose or effect of substantially interfering with an individual’s employment, public accommodations or public services, education or housing environment."
2. To assist in the investigation of complaints of sexual harassment/discrimination brought by LCC students or employees.
3. To make recommendations for resolution and/or corrective action.

B. Timetable
An investigation will begin no later than 20 working days following the receipt of the sexual harassment/discrimination complaint form or immediately following a request from the EO Officer.

C. Complainants
The EO Officer will contact the complainant and inform him or 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.

D. Notification
The EO Officer will inform the alleged harasser/discriminator of the complaint as soon as is practicable but it is appropriate, within the time limits specified within the designated Master Agreement. The divisional leader and immediate supervisor will also receive notification that an investigation is in progress. The results of the investigation will be reviewed with the alleged harasser/discriminator in the exit interview upon the completion of the fact finding.

E. Confidentiality
Students and/or staff who bring forth formal or informal complaints of discrimination/sexual harassment should maintain confidentiality throughout the entire complaint process. Sharing information pertaining to a complaint should be on a "need to know" basis only. It should be noted, however, the College cannot guarantee confidentiality beyond the limits of the investigation.

At each step of the 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.

IV. 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 sexual harassment/discrimination other wrongdoings are found, these issues will be dealt with separately from the sexual harassment/discrimination complaint.

DEFINITION: A poster is any written communication designed to apply to a wall or other surface for the purpose of relaying 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 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 administrative 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 rolling used books, sharing a ride, sharing an apartment, and selling personal articles. Profit-making commercial notice 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 Dean of Student Life. A meeting will be held between the appealing poster sponsor or sponsors with the Dean of Student Life to discuss the appeal. If the appeal is not resolved, a formal appeal may be presented to the Dean of Student Life. This appeal must be in writing. The Dean of Student Life will determine whether the appeal is made within 5 days of receipt of the appeal. If so, the Dean of Student Life will forward the appeal together with all supporting material to the Dean of Student and Academic Support Division. The Dean of Student and Academic Support Division will determine whether the appeal is made within 5 days of receipt of the appeal. If so, the Dean of Student and Academic Support Division will act within five (5) days of receipt of the appeal. If the student or student organization is unsatisfied with the decision of the Dean of Student Life, a written appeal may be filed within five (5) days of receipt of the appeal. The written appeal must contain the reasons for the appeal, and a copy of the poster must be submitted with the appeal. A decision will be made by the Dean of Student and Academic Support Division. The decision is final, and the student or student organization is expected to comply with the decision within 5 days of receipt of the appeal. If the student or student organization is unsatisfied with the decision of the Dean of Student and Academic Support Division, the appeal may be filed in the college court. Failure to comply with the above regulations will lead to the denial of approval, 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 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.

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 faculty 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. 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 regulation by any and all individuals. This regulation is designed to facilitate communication through the use of posters while complying with the legalistic instructional mission 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 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 with the approval of the College office, and the College will post 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 recognizes 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 legislative mission of the College to serve the citizens of the 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 Washington Square Mall lobby between the Gannon Vocational-Technical Center and the Arts and Sciences Building.
   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 have their organizations to 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-come, 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 individual 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 solicitation 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 obscene, lewd, or against the College regulations and reasonably believed to be of serious content to the detriment of the College community. 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

INDIVIDUAL STUDENT

1. Register for reservation for use of table.
2. Have Director of Student Life review copy of literature.
3. Place copies of literature on file in Student Life Office.
4. Have a copy of requisition form at table while distributing literature.
5. Have table staffed at all times by individual student or student organization member.

STUDENT LIFE OFFICE

STUDENT ORGANIZATION

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 Dean of Student and Academic Support Division (or designee) within 10 calendar days of the denial or requirement to halt distribution. The Dean of Student and Academic Support Division (or designee) shall make a prompt investigation of the appeal, collecting 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 Dean of Student and Academic Support Division is not satisfactory, the individual student or recognized student club or organization may appeal the Dean's decision to the Student Activities Board of the College. This second appeal must be in writing and presented to the Chairperson of the Student Activities Board within 10 calendar days of the decision of the Dean of Student and Academic Support Division.

The Student Activities Board shall make a prompt investigation of the appeal, contacting the parties involved, and shall within 10 calendar days from the date of the appeal, make a decision to reinstate the distribution rights or uphold the denial or required halt of distribution. The decision of the Student Activities Board shall be final.

Where it is contemplated that a violation of the student literature distribution procedural regulations warrants the imposition of disciplinary action upon an
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 and 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 give students a standard course syllabus 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 independently and independently.
11. Faculty will be available to assist students outside the classroom, including during regular 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 environment;
   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 Guidebook. Copies of The Student's Guidebook may be obtained from the Student Life Office, Room 205F, Bannoo Vocational-Technical Center.

Career and Employment Services offers career testing, planning, and counseling services for members of the community, local businesses, industry, and students. Services also include assistance with job search, full- and part-time employment (including college Work Study), help with writing resumes and cover letters, and information about interviewing and other techniques for use in seeking employment. All services provided are related to career planning and employment readiness.

Counseling and Academic Advising Services include personal counseling to identify and assist in resolving students' personal and interpersonal issues and concerns; career counseling; and educational planning to facilitate career decisions, choice of major, and course selection; evaluation of the need for additional academic preparation to strengthen such basic skills as reading, writing, and mathematics; transfer planning for successful transition to bachelor level programs; referral to community human service agencies for further professional assistance; and academic advising to assist students with information and course selection.

Extension and Community Education provides information about and coordination of LCC off-campus classes conducted in school district locations within a 30-mile radius of the College's main Lansing campus.

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 Cultural Center.

The Lansing Community College Foundation supports students, faculty, programs, and facilities through philanthropic initiatives in the College and 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, a computer catalog listing library resources, interlibrary loan service, computerized information research service, individual and group library orientations, book renewals by phone, library use guides, dial access to the LCC Library catalog and area libraries and access to print, CD-ROM, and electronic and Internet resources.

The Limited English Proficiency Program provides counseling, academic advising, registration assistance, financial aid assistance, and intensive English training for students with limited English skills.

Identity Outreach and Recruitment provides a Special Assistant to interact with all offices providing student support services in order to facilitate minority student access to these services. The Special Assistant recruits potential minority students; develops and maintains community contact with various minority
organizations, clubs, and associations; identifies problems and barriers of the
minority student population and proposes appropriate responses; coordinates and
plans special cultural/ethnic observations and celebrations; and serves as an
advocate on behalf of minority students.

The Student Life Office enhances student leadership, development, and suc-
cess through involvement in and exposure to diverse experiences and
opportunities. These include Student Senate, a comprehensive student leader-
ship development experience consisting of the Student Advisory Committee to
the President, Club Council, and the Student Leadership Academy; student clubs
and organizations; student activities, such as low-cost travel opportunities; cam-
pus 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 mentoring and service learning
opportunities for students to nurture, promote, and instill the spirit of volunteerism.
The Student Life Office also provides a housing resource listing service.

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

The Women's Resource Center offers services and programs in support of
women and men at Lansing Community College, including financial assistance,
displaced homemaker services, childcare assistance, 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 in the Office of Disability Support
Services (517) 483-1184, Voice/TTY, or (517) 483-1218, TTY only. The College
adheres to the standards and guidelines set forth in the "Americans With Disabili-
ties Act."

To be eligible for services and accommodations through ODDS, students are
required to provide written verification of their disability. If documentation is not
available, services may be provided for the first semester only. Documentation
must be signed and dated by a qualified professional who has diagnosed the disa-
ability. If necessary, the ODDS staff can help students find the appropriate
professionals to diagnose their disability.

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

1997-98 catalog Lansing Community College

www.lcc.edu
ASSOCIATE IN ARTS DEGREE

EFFECTIVE FALL 1997 – SUMMER 2002

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 consult 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 6 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 check with an advisor at the Counseling and Advising Center (Room 103 of the Arts and Sciences Building, telephone number (517) 483-1044) to determine the appropriateness of transfer guides and the letter 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 Academic Affairs Office, Room 110, Arts and Sciences Building.

I. GENERAL EDUCATION REQUIREMENTS - Minimum 35 credits

By following the directions in this section, students will automatically be able to satisfy the following general education requirements:

1. English Composition - 6 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 122 (4)

2. Science and Mathematics - Minimum of 8 credits
   Completing at least one underlined course from A or B will satisfy the LCC General Education Core Requirement in Science and Technology. If C is not chosen in this category, then the LCC Core requirement for Mathematics must be met by one of the options described on page 23 of this catalog.
   A minimum of 8 credits must be chosen from two of the three categories below (A, B, C).

   A. Physical Science
      ASTR 201 (4) OR GEOG 222 (4) OR METR 220 (4)
      CHEM 135 (4) OR GEOG 230 (4) OR OCNL 225 (4)
      CHEM 151 (4) & CHEM 151 (4) OR SCI 121 (4) OR PHYS 201 & 225 (4)
      GEOL 200 (3) OR SCI 121 (4) OR PHYS 215 & 225 (6)
      GEOL 221 (4)

   B. Biological Science
      ANAT 145 (4) OR BIOL 128 (4) OR SCI 132 (4)
      ANAT 151 (3) OR BIOL 215 (4) OR MCR 203 & 204 (4)
      ANAT 201 (4) OR BIOL 260 (4) OR PHGY 202 (4)
      BIOL 121 (4) OR BIOL 265 (4)
      BIOL 277 (4) OR SCI 122 (4)

   C. Mathematics
      MATH 122 (4) OR MATH 161 (3) OR STAT 171 (3)
      MATH 122 (3) OR MATH 151 (4) OR STAT 215 (4)
      MATH 126 (5) OR MATH 152 (4)
      MATH 130 (3) OR MATH 201 (3)

3. Social Science - Minimum of 8 credits
   Completing at least one underlined course from Category 3 OR Category 4 will satisfy the LCC General Education Core Requirement in Social Perspectives and Diversity.
   - Complete one course in Political Science from the following:
     PCLS 120 (4) OR POLS 121 (4)
   - Complete one course or course pair from the following:
     ECON 120 (4) OR GEOG 200 (4) OR SOC 120 (4)
     ECON 201 & 202 (6) OR PSYC 200 (4)

4. Humanities - 8 credits
   Completing at least one underlined course from Category 3 OR Category 4 will satisfy the LCC General Education Core Requirement in Social Perspectives and Diversity.
   Completing one course from group A and one from group B. It is recommended that the Group A course be completed before the Group B course.

   GROUP A
   - ENGL 211 (4)
   - HUMS 211 (4)
   - PHIL 211 (4)
   - HIST 211 (4)
   - HUMS 213 (4)
   - RELG 211 (4)

   GROUP B
   - ENGL 212 (4)
   - HUMS 212 (4)
   - RELG 212 (4)
   - HIST 212 (4)
   - HUMS 214 (4)
   - PHIL 214 (4)
   - HIST 214 (4)

5. Speech - 3 credits
   Complete the following course: SPCH 120 (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.

36 ■ LANSING COMMUNITY COLLEGE CATALOG 1997–98
ASSOCIATE IN ARTS DEGREE

PRE-ACCOUNTING

Curriculum Code: 10254

1. Complete ECON 201 and ECON 202 to satisfy part of 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 (15 credits):
   - ACCG 210 Principles of Accounting I (4)
   - ACCG 211 Principles of Accounting II (4)
   - MATH 141 Calculus with Applications (3)
   - STAT 215 Introduction to Probability and Statistics for Business (4)

4. Complete one of the following (3–4 credits):
   - CIS 100 Introduction to Computer Information Systems (3)
   - CIS 120 Introduction to Programming and Logic Using Basic (4)
   - CPSC 120 Introduction to Computers (3)

5. Complete one of the following (3 credits):
   - MATH 122 College Algebra II and Trigonometry (3)
   - MATH 135 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: 10137

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 the Present (4)
   - HIST 214 African History (4)
   - HIST 260 Conflict and Revolution in Southern Africa (4)

3. Complete a minimum of 7 credits from the following:
   - ENGL 260 African American Literature (4)
   - SOCL 235 Contemporary Social Problems (3)
   - Any foreign language with course numbers 121, 122, 201, or 202 (4)

AMERICAN STUDIES

Curriculum Code: 10142

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 the 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: 10746

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 110 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: 10232

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):
   - CIS 100 Introduction to Computer Information Systems (3)
   - CPSC 120 Introduction to Computers (3)

5. Complete one of the following (3–4 credits):
   - ECON 213 Economic/International History of the U.S. (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 Introduction to Probability and Statistics for Business (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: 10146

1. Complete the following required courses (15 credits):
   - CJUS 101 Introduction to Criminal Justice (3)
   - CJUS 102 Crime Causes and Conditions (3)
   - CJUS 103 Criminal Law (3)
   - CJUS 106 Juvenile Problems, Control and Prevention I (3)
   - CJUS 131 Introduction to Corrections (3)

2. Complete a minimum of 10 credits from the following:
   - 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)

LANSING COMMUNITY COLLEGE CATALOG 1997-98 • 37
ASSOCIATE IN ARTS DEGREE

PRE-ECONOMICS

1. Complete ECON 201 and ECON 202 to satisfy part of the Social Science General Education Requirement.

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 Trigonometry (3)

4. Complete a minimum of 17 credits from the following:
   - ACCG 210 Principles of Accounting I (4)
   - ACCG 211 Principles of Accounting II (4)
   - ECON 213 Economic/Business History of the U.S. (3)
   - ECON 221 International Economics (3)
   - MATH 141 Calculus with Applications (3)
   - MATH 151 Calculus I (4)
   - MATH 152 Calculus II (4)
   - MATH 253 Calculus III (4)
   - MATH 254 Introduction to Differential Equations (3)
   - MATH 255 Linear Algebra (3)
   - PSYC 200 Introduction to Psychology (4)
   - SOCL 120 Introduction to Sociology (4)
   - STAT 219 Introduction to Probability and Statistics for Business (4)
   Any foreign language with course numbers 121, 122, 201, or 202 (4)

ELEMENARY EDUCATION

1. Complete PSYC 200 to satisfy part of the Social Science General Education Requirement.

2. Complete the following required courses (20 credits):
   - ARTS 240 Basic Art for Elementary Teachers (3)
   - CPSC 120 Introduction to Computers (3)
   - EDUC 201 Education Practice I (2)
   - EDUC 220 Introduction to Education (3)
   - MATH 201 Math for Liberal Arts I (3)
   - MUSC 200 Music Fundamentals for Elementary Classroom Teachers (3)
   - PSYC 204 Educational Psychology (3)

3. Complete two of the following three choices (A, B, C) (6-8 credits):
   A. GEOG 121 Physical Geography (3)
   B. GEOG 200 World Regional Geography (4)
   C. PSYC 205 Human Growth and Development (3)
   D. PSYC 221 Child Psychology (3)
   E. ANTH 270 Cultural Anthropology (3)
   F. SOCL 120 Introduction to Sociology (4)
   or
   G. SOCL 260 Minority Groups (3)

FINE ARTS

1. Complete HUMS 211 and HUMS 212 to satisfy part of 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 6 credits from the following:
   - ARTS 140 Printmaking I (3)
   - ARTS 141 Printmaking II (3)
   - ARTS 145 Screen Printing I (3)
   - ARTS 146 Screen Printing II (2)
   - ARTS 200 Painting I (3)
   - ARTS 201 Painting II (3)
   - ARTS 204 Watercolor I (3)
   - ARTS 205 Watercolor II (3)

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

FOREIGN LANGUAGE

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)
   B. FREN 122 Elementary French II (4)
   C. FREN 201 Intermediate French I (4)
   D. FREN 202 Intermediate French 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

1. Complete GEOG 230 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 10 credits from the following:
   - ANTH 270 Cultural Anthropology (3)
   - ECON 120 Power, Authority and Exchange (4)
   - GEOG 203 Economic Geography (3)
   - GRET 205 Principles to Geographic Information Systems (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)

38 • LANSING COMMUNITY COLLEGE CATALOG 1997-98
ASSOCIATE IN ARTS DEGREE

HISTORY
Curriculum Code: 10197

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 (12 credits):
   - HIST 211 U.S. History to 1877 (4)
   - HIST 212 U.S. History: 1877 to the Present (4)
   - HIST 214 African History (4)

3. 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 and Revolution in Southern Africa (4)
   - RELG 250 Religions of East Asia (4)

HUMANITIES
Curriculum Code: 10119

1. Complete courses other than HUMS 213 and HUMS 214 to satisfy the Humanities General Education Requirement.

2. Complete the following required courses (8 credits):
   - HUMS 213 World Civilizations I (4)
   - HUMS 214 World Civilizations II (4)

3. 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 the Present (4)
   - HUMS 120 Western Art and Music History (4)
   - HUMS 150 Mythology (4)
   - HUMS 211 History of Art I (4)
   - HUMS 212 History of Art II (4)
   - PHIL 151 Introduction to Logic and Critical Thinking (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: 10252

1. Complete GEOG 200 and POLS 120 to satisfy the Social Science General Education Requirement.

2. Complete HUMS 213 and HUMS 214 to satisfy the Humanities General Education Requirement and the Global Diversity Core Requirement.

3. Complete one of the following (3 credits):
   - POLS 260 Comparative Political Systems (3)
   - POLS 270 International Relations (3)

4. Complete 8 credits of any foreign language with course numbers 121, 122, 201, or 202.

LIBERAL ARTS
Curriculum Code: 10251

Complete a minimum of 25 credits from the list of Limited Choice Electives at the end of this section. A maximum of 6 of these 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 255 American Literature I (4)
- MATH 201 Math for Liberal Arts I (3)
- PHIL 152 Introduction to Ethics (4)
- PSY 200 Introduction to Psychology (4)
- SOCI 120 Introduction to Sociology (4)
- SPCH 280 Intercultural Communication (3)
- Any foreign language with course numbers 121, 122, 201, or 202 (4)

LITERATURE
Curriculum Code: 10124

1. 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)

2. Complete a minimum of 16 credits from one of the following choices (A, B):

   A. (ENGL 255 American Literature I (4)
        ENGL 256 American Literature II (4)
        ENGL 258 American Literature II (4)
        ENGL 260 African American Literature (4)
        ENGL 265 British Literature I (4)
        ENGL 266 British Literature II (4)
        HUMS 150 Mythology (4)
        PHIL 151 Introduction to Logic and Critical Thinking (4)
        RELG 241 Old Testament Literature (4)
        Any foreign language with course numbers 121, 122, 201, or 202 (4)

   B. EDUC 201 Education Practicum I (2)
        EDUC 220 Introduction to Education (3)
        ENGL 255 American Literature I (4)
        ENGL 258 American Literature II (4)
        PSYC 200 Introduction to Psychology (4)
        PSYC 304 Educational Psychology (3)
ASSOCIATE IN ARTS DEGREE

PHILOSOPHY  
Curriculum Code: 10159

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 211 World Philosophies I (4)
   - PHIL 212 World Philosophies II (4)
   - PHIL 151 Introduction to Logic and Critical Thinking (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)
   - HUMS 214 World Civilizations II (4)
   - HUMS 225 Great Lakes Native Americans: History and Tradition (4)
   - PHIL 152 Introduction to Ethics (4)
   - PHIL 153 Knowledge and Reality (4)
   - PHIL 260 Contemporary Ethical Problems (4)
   - RELG 250 Religions of East Asia (4)
   - Any foreign language course numbers 121, 122, 201, or 202 (4)

POLITICAL SCIENCE  
Curriculum Code: 10750

1. Complete POLS 120 and SOCL 120 to satisfy the Social Science General Education Requirement.

2. Complete ISCI 131 to satisfy part of the Science and Mathematics General Education Requirement.

3. Complete HIST 211 and 212 to satisfy the Humanities General Education Requirement.

4. Complete the following required courses (7 credits):
   - POLS 121 State and Local Government (4)
   - POLS 260 Comparative Political Systems (3)

5. Complete a minimum of 18 credits from the following:
   (NOTE: If STAT 170 is selected, then select MATH 121 to satisfy part of the Science and Mathematics General Education Requirement.)
   - CPSC 120 Introduction to Computers (3)
   - ECON 123 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)
   - POLS 220 Political Behavior (3)
   - POLS 255 Government Internship (3)
   - POLS 259 Social Roles and Political Change in a Post-Industrial Society (3)
   - POLS 260 American Political Parties and Interest Groups (3)
   - POLS 263 Political and Government of Japan (3)
   - PSYC 200 Introduction to Psychology (4)
   - RELG 235 Contemporary Social Problems (3)
   - RELG 250 Minority Group (3)
   - STAT 170 Introduction to Statistics (3)
   - Any foreign language course numbers 121, 122, 201, or 202 (4)

PSYCHOLOGY  
Curriculum Code: 10215

1. Complete PSYC 200 to satisfy part of the Social Science General Education Requirement.

2. Complete ISCI 131 and MATH 121 to satisfy the Science and Mathematics General Education Requirement.

3. Complete one of the following two courses (3 credits):
   - PSYC 230 Social Psychology (3)
   - PSYC 204 Educational Psychology (3)

4. Complete one of the following three courses (3 credits):
   - PSYC 205 Human Growth and Development (3)
   - PSYC 221 Child Psychology (3)
   - PSYC 222 Adolescent Psychology (3)

5. Complete one of the following two courses (3 credits):
   - PSYC 209 Cognitive Psychology (3)
   - PSYC 210 Biological Psychology (3)

6. Complete one of the following three courses (3 credits):
   - PSYC 202 Psychology of Personality (3)
   - PSYC 240 Psychology of Human Sexuality (3)
   - PSYC 250 Abnormal Psychology (3)

7. Complete a minimum of 10 credits from the following:
   - ANTH 270 Cultural Anthropology (3)
   - CPSC 120 Introduction to Computers (3)
   - POLS 230 Sex Roles & Political Change in a Post-Industrial Society (3)
   - RELG 210 Introduction to Sociology (4)
   - RELG 254 Marriage and Family (3)
   - STAT 170 Introduction to Statistics (3)
   - STAT 215 Introduction to Probability and Statistics for Business (4)
   - Any foreign language course numbers 121, 122, 201, or 202 (4)
   - Any PSYC course not used to complete one of the above requirements.

RELIGION  
Curriculum Code: 10751

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)
   - PSYC 260 Contemporary Ethical Problems (4)
   - RELG 241 Old Testament Literature (4)
   - RELG 242 New Testament Literature (4)
   - RELG 250 Religions of East Asia (4)
   - Any foreign language course numbers 121, 122, 201, or 202 (4)
ASSOCIATE IN ARTS DEGREE

SECONDARY EDUCATION  
Curriculum Code: 10752

1. Complete PSYC 200 to satisfy part of the Social Science General Education Requirement.

2. Complete the following required courses (11 credits):
   - CPSC 120 Introduction to Computers (3)
   - EDLC 201 Education Praxicum I (2)
   - EDLC 220 Introduction to Education (3)
   - PSYC 204 Educational Psychology (3)

3. Complete one of the following four courses (3-4 credits):
   - ANTH 270 Cultural Anthropology (3)
   - PSYC 205 Human Growth and Development (3)
   - PSYC 222 Adolescent Psychology (3)
   - SOCL 120 Introduction to Sociology (4)
   - SOCL 260 Minority Groups (3)

4. Complete one of the following two courses (4 credits):
   - MATH 112 Intermediate Algebra (4)
   - MATH 121 College Algebra I (4)

5. Complete a minimum of 6-7 credits from the list of Limited Choice Electives at the end of this section in the subject area in which you plan to teach.

SOCIAL SCIENCE  
Curriculum Code: 10121

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 200 Political Behavior (3)
   - POLS 230 Sex Roles and Political Change in a Post-Industrial Society (3)
   - POLS 250 American Political Parties and Interest Groups (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 275 Physical Anthropology and Archeology (3)
   - ANTH 276 Prehistoric Archeology (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.

SOCIOLGY  
Curriculum Code: 10753

1. Complete POLS 120 and SOCL 120 to satisfy the Social Science General Education Requirement and the Global Diversity Core Requirement.

2. Complete ISCI 131 and 132 to satisfy the Science and Mathematics General Education Requirement.

3. Complete HUMS 213 and 214 to satisfy the Humanities General Education Requirement.

4. Complete the following required courses (6 credits):
   - ANTH 270 Cultural Anthropology (3)
   - SOCL 255 Contemporary Social Problems (3)

5. Complete a minimum of 19 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 120 Introduction to Geography (3)
   - MATH 121 College Algebra I (4)
   - POLS 230 Sex Roles and Political Change in a Post-Industrial Society (3)
   - POLS 250 Comparative Political Systems (3)
   - POLS 260 International Relations (3)
   - PSYC 200 Introduction to Psychology (4)
   - PSYC 203 Social Psychology (3)
   - SOCL 254 Marriage and Family (3)
   - SOCL 260 Minority Groups (3)
   - SOCL 280 Introduction to Japanese Culture (3)
   - STAT 170 Introduction to Statistics (3)

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

SPEECH COMMUNICATION  
Curriculum Code: 10136

1. Complete SOCL 120 to satisfy part of the Social Science General Education Requirement.

2. Complete the following required courses (6 credits):
   - SPCH 120 Fundamentals of Public Speaking (3)
   - SPCH 140 Interpersonal Communication (3)
   - SPCH 280 Intercultural Communication (3)

3. Complete a minimum of 5 credits from the following:
   - SPCH 110 Oral Communication in the Workplace (3)
   - SPCH 280 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 200 Introduction to Linguistics (3)
   - PHIL 151 Introduction to Logic and Critical Thinking (4)
   - POLS 200 Political Behavior (4)
   - 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:
   - ANAT
   - CHIN
   - CNRS
   - CNGI
   - CPSC
   - GEOG
   - HUMS
   - MATH
   - PHIL
   - RELG
   - STAT
   - ASTR
   - ECON
   - GEOI
   - ISCI
   - METR
   - PHYS
   - SOCCL
   - WRIT
   - BIOL
   - EDUC
   - GRMN
   - JPN
   - MICR
   - POLS
   - SOWK
   - CHEM
   - ENGL
   - HIST
   - JHRL
   - OCNL
   - PSYC
   - SPAN

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, 175, 176, 180, 182, 200, 201, 203, 204, 205, 206, 214, 262
   - BUSN 118, 201, 250
   - CHDV 101, 111, 120, 121, 178, 198, 202, 221
   - CHIN 115
   - CISB 100, 105, 120, 121, 122, 170, 175, 160, 240, 250, 255, 260, 269, 281

3. A maximum of two credit hours from courses with any of the course codes listed below:
   - PFAQ
   - PFDA
   - PFHC
   - PFS
   - PFPR
   - PFCW
   - PFST
   - PFHW
   - PFOA
   - PFST
ASSOCIATE IN SCIENCE DEGREE

EFFECTIVE FALL 1997 – SUMMER 2002

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

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 Class 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 (Room 103 of the Arts and Sciences Building), telephone number (517) 483-1904, obtain an appropriate transfer guide (also in the Counseling and Advising Center), and 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 Academic Affairs Office, Room 110, Arts and Sciences Building.

**I. GENERAL EDUCATION REQUIREMENTS** Minimum of 35 credits

By following the directions in this section, 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.

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 parenthesis.

**NOTE:** In this section, courses that satisfy the LCC General Education Core Requirements are underlined.

**1. English Composition** Minimum of 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) OR WRIT 122 (4) OR ENGL 192 (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 underlined course from A or B will satisfy the LCC General Education Core Requirement in science and technology. If C is not chosen in this category, then the LCC Core requirement for Mathematics must be met by one of the options described on page 23 of this catalog.

- A. Physical Science
  - CHEM 151 & 151L (5)
  - METR 220 (4)
  - PHYS 201 & 202 (5)
  - GEOL 200 (3)
  - OCNL 225 (4)
  - PHYS 215 & 225 (6)
  - GEOL 221 (4)
  - GEOL 222 (4)

- B. Biological Science
  - ANAT 201 (4)
  - BIOL 128 (4)
  - BOL 265 (4)
  - BIOL 121 (4)
  - BIOL 210 (4)
  - MICRO 203 & 204 (4)
  - BIOL 127 (4)
  - BIOL 250 (4)
  - PHYG 224 (4)

- C. Mathematics
  - MATH 121 (4)
  - MATH 141 (3)
  - STAT 172 (5)
  - MATH 122 (3)
  - MATH 151 (4)
  - STAT 213 (4)
  - MATH 126 (5)
  - MATH 152 (4)
  - MATH 130 (3)
  - MATH 201 (3)

**3. Social Science** Minimum of 8 credits

Completing at least one underlined course from Category 3 OR Category 4 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 or course pair from the following:
  - ECON 120 (4)
  - GEOG 200 (4)
  - GEOG 120 (4)
  - ECON 202 & 206 (6)
  - PSYC 200 (4)

**4. Humanities** Minimum of 8 credits

Completing at least one underlined course from Category 3 OR Category 4 will satisfy the institutional Core requirement in Global Perspectives and Diversity.

- Complete one course from group A and one from group B. It is recommended that the Group A course be completed before the Group B course.

**GROUP A**

- ENGL 211 (4)
- HUMS 211 (4)
- PHIL 211 (4)
- HIST 211 (4)
- HUMS 213 (4)
- RELG 211 (4)

**GROUP B**

- ENGL 212 (4)
- HUMS 212 (4)
- RELG 212 (4)
- HIST 212 (4)
- HUMS 214 (4)
- PHIL 212 (4)

**5. Speech**

Complete the following course: SPCH 120 (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 parenthesis.

**LANSING COMMUNITY COLLEGE CATALOG 1997-98** 

43
ASSOCIATE IN SCIENCE DEGREE

BIOLOGY
Curriculum Code: 10221

1. Complete MATH 121, CHEM 151 and 161 to satisfy the Science and Mathematics General Education Requirement.

2. Complete the following required courses (15 credits):
   BIOL 127 Cell Biology (4)
   BIOL 128 Organismal Biology (4)
   CHEM 152 General Chemistry Lecture II (3)
   CHEM 162 General Chemistry Laboratory II (1)
   STAT 170 Introduction to Statistics (3)

3. Complete a minimum of 12 credits from the following:
   BIOL 210 Natural Resource Conservation (4)
   BIOL 250 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 272 Organic Chemistry Laboratory (2)
   MICRO 263 Microbiology (3)
   MICRO 264 Microbiology 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
BIOL 127  BIOL 128
CHEM 151  CHEM 152
CHEM 161  CHEM 162
MATH 121  STAT 170

CHEMISTRY
Curriculum Code: 10117

1. Complete MATH 151, CHEM 151 and CHEM 161 to satisfy the Science and Mathematics General Education Requirement.

2. Complete the following required courses (28 credits):
   (NOTE: In order to complete sequences, MATH 253, PHYS 216, and
   PHYS 226 are also recommended.)
   BIOL 127 Cell Biology (4)
   CHEM 152 General Chemistry Lecture II (3)
   CHEM 152 General Chemistry Laboratory II (1)
   CHEM 251 Organic Chemistry Lecture I (4)
   CHEM 252 Organic Chemistry Lecture II (4)
   CHEM 272 Organic Chemistry Laboratory (2)
   MATH 152 Calculus II (4)
   PHYS 215 Physics I: Mechanics (5)
   PHYS 225 Physics I: 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  BIOL 127  CHEM 251  CHEM 262
CHEM 161  CHEM 152  PHYS 215  CHEM 272
MATH 151  CHEM 162  PHYS 225

COMPUTER SCIENCE
Curriculum Code: 10159

1. Complete MATH 151 and PHYS 215 and 225 to satisfy the Science and Mathematics General Education Requirement.

2. Complete the following required courses (19 credits):
   CPSC 230 Algorithms and Computing with C++ (4)
   CPSC 290 Discrete Structures in Computer Science (4)
   CPSC 296 Data Structures (3)
   MATH 152 Calculus II (4)
   MATH 253 Calculus III (4)

3. Complete a minimum of 8 credits from the following:
   (NOTE: In order to complete sequences, PHYS 216 is also recommended.)
   MATH 254 Introduction to Differential Equations (3)
   MATH 250 Linear Algebra (3)
   PHYS 216 Physics II: Electromagnetism, Waves, and Optics (5)
   PHYS 226 Physics II Laboratory (1)
   STAT 215 Introduction to Probability and Statistics for Business (4)

ENVIRONMENTAL SCIENCE
Curriculum Code: 10755

1. Complete NUNMS 213 and NUNMS 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 152 Introductory Organic Chemistry (3)
   CHEM 252 Introductory Organic Chemistry Laboratory (1)
   CPSC 120 Introduction to Computers (3)
   GEOL 250 Environmental Geology (4)
   STAT 170 Introduction to Statistics (3)

4. Complete a minimum of 4 credits from the following:
   BIOL 200 Botany (4)
   BIOL 255 Zoology (4)
   GEOS 111 Physical Geography (3)
   GEOT 203 MicroStation Beginning (3)
   METR 220 Introduction to Meteorology (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  BIOL 128  BIOL 210  GEOL 220
CHEM 161  CHEM 152  CHEM 192
CPSC 120  CHEM 192
MATH 121  STAT 170

44  LAHNING COMMUNITY COLLEGE CATALOG 1997–98
GEOSCIENCE

1. Complete MATH 126, 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 Laboratory II (1)
   - GEOL 221: Earth Materials and Processes: Physical Geology (4)
   - GEOL 222: Earth and Life Through Time: Historical Geology (4)
   - GEOL 230: Environmental Geology (4)

3. Complete a minimum of 16 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)
   - GEOL 200: Michigan Geology (3)
   - GEOL 210: Geology Field Studies (1)
   - METR 226: Introduction to Meteorology (4)
   - OCNL 225: Basic Oceanography (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 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
   CHEM 151
   CHEM 152
   GEOL 230
II
   CHEM 151
   CHEM 162
III
   GEOL 221
   GEOL 222
IV
   MATH 126

MATH/ENGINEERING

1. Complete MATH 151 and PHYS 215 and 225 to satisfy the Science and Mathematics General Education Requirement.

2. Complete the following required courses (19 credits):
   - MATH 152: Calculus II (4)
   - MATH 253: Calculus III (4)
   - MATH 254: Introduction to Differential Equations (3)
   - MATH 260: Linear Algebra (3)
   - PHYS 216: Physics II: Electromagnetism, Waves, and Optics (5)

3. Complete a minimum of 6 credits from the following:
   - CPSC 220: Algorithms and Computing With C++ (4)
   - CPSC 260: Discrete Structures in Computer Science (4)
   - CPSC 280: Data Structures (3)
   - MATH 281: Honors Math Seminar I (1)
   - PHYS 228: Physics II Laboratory (1)
   - STAT 215: Introduction to Probability and Statistics for Business (4)

PHYSICS/ENGINEERING

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):
   - MATH 152: Calculus II (4)
   - MATH 253: Calculus III (4)
   - PHYS 215: Physics I: Mechanics (5)
   - PHYS 225: Physics I Laboratory (1)
   - PHYS 216: Physics II: Electromagnetism, Waves and Optics (5)
   - PHYS 226: Physics II Laboratory (1)

3. Complete a minimum of 7 credits from the following:
   - BIOL 127: Cell Biology (4)
   - CHEM 152: General Chemistry Lecture II (3)
   - CHEM 162: General Chemistry Laboratory II (1)
   - CPSC 150: FORTRAN (3)
   - CPSC 230: Algorithms and Computing With C++ (4)
   - MATH 254: Differential Equations (5)
   - MATH 260: Linear Algebra (5)

NOTE: The following is 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
   CHEM 151
   MATH 152
   MATH 253
   PHYS 215
   PHYS 225
II
   CHEM 161
   PHYS 216
III
   MATH 151
   PHYS 226
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 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 seek an academic advisor or counselor before enrolling in any course.

ACCOUNTING
Accounting, AB .......................... 48
Accounting, CA ......................... 48
Accounting, CPA Exam Preparation, AB .... 48
Managerial Accounting, AB .......... 50

ARCHITECTURE
Architectural Technology,
Computer Graphics Option, AAS ......... 51
Architecture Technology, Core Option, AAS .... 52
Architectural Technology,
Residential Design Option, AAS ........ 53

ART
Computer Graphics, Animation, AAS ...... 54
Computer Graphics, Multimedia, AAS .... 55
Fine Art Foundation, AAS .............. 56
Graphic Design, AAA .................. 58
Illustration, AAA ....................... 59

AUTOMOTIVE
Auto Body Repair, AAS ............. 59
Auto Body Repair, CA ............... 59
Automotive Technology, AAS ........ 60
Automotive Technology, CA ......... 60

AVIATION
Airframe Maintenance Technology, AAS .... 61
Aviation Flight Technology, AAS ....... 62
Avionics, AAS ......................... 63
Powerplant Maintenance Technology, AAS .... 64

BANKING MANAGEMENT
Banking Management, AAS Diploma Program, AB .... 65
Banking Management, AAS Diploma Program, CA .... 65

BUILDING
Building Maintenance, AAS ........ 86
Building Maintenance, CA ........ 86

BUSINESS
Business Administration, AB .......... 67
International Business, AB .......... 68

CIVIL TECHNOLOGY
Civil Technology, AAS ............. 69

COMPUTERS
Computer Networking and
Communications, AB .......... 70
Computer Security and Controls, AB .... 71
Electronics Technology .......... 72
Computer Technician, AAS ........ 72
Computer Repair Technician, CA .... 72
Microcomputer Support Specialist, AB .... 73
Microcomputer Systems, AAS .......... 74
Microcomputer Systems, CA ........ 74
Programmer/Analyst, AB ........... 75

COMPUTERS - ADVANCED
Advanced Microcomputer Application
Specialist, DC ........................ 76
Microcomputer User Support Specialist, AAS, CC .... 76
System Support Specialist for AS/400, CC .... 77
Windows Programming Specialist, CC .... 77

CONSTRUCTION
Residential Building, AAS ......... 79
Residential Building, CA ........ 79

COURT AND CONFERENCE REPORTING
Court and Conference Reporting, AB .... 79

CREDIT UNION MANAGEMENT
Credit Union Management, AAS .......... 80
Credit Union Management, CC .......... 80

CRIMINAL JUSTICE
Criminal Justice, Corrections, AAS .... 81
Criminal Justice, Law Enforcement, AAS .... 82
Mid-Michigan Police Academy, CC ........ 83

DRAFTING
CADD Drafting, AAS ................. 84
Drafting and Design, AAS .......... 85
Drafting and Design, CA ............ 85

ELECTRICAL
Electrical Technology, AAS .......... 86
Electrical Technology, Construction, AAS .... 87
Electrical Technology, Control and
Maintenance, AAS ......... 87
Electronics Technology .......... 88
Biomedical Science, AAS ......... 89
Electronics Technology,
Communications Option, AAS ....... 89
Electronics Technology, Digital Option, AAS .... 90

ENVIRONMENTAL TECHNOLOGY
Environmental Resource Management
Technology, AAS .............. 91
Geographic Resources and Environmental
Technology, AAS ......... 92

FIRE SCIENCE
Fire Science Academy, CC .......... 93
Fire Science Technology, AAS ....... 94

HEALTHCARE
Dental Assistant, CA ............. 95
Dental Hygiene, AAS ............. 96
Diagnostic Medical Sonography, AAS .... 97
Emergency Medical Services, AAS .... 98
Basic Emergency Medical Services, CA .... 99
Massage Therapy, CC ......... 100
Medical Assistant, CA ........... 100
Multi-Skilled Patient Care Technician, CC .... 101
Nursing, LPN Option, CC .......... 102
Nursing, RN Option, AAS .......... 103
Paramedic, CA ................. 104
Radiation Therapy, AAS ....... 105
Radiation Therapy, Advanced Standing, CA .... 105
Radiologic Technology, AAS .... 107
Respiratory Therapist, AAS .... 108
Surgical Technology, CA ....... 109

HEATING, AIR CONDITIONING, AND
REFRIGERATION
Heating, Air Conditioning, and
Refrigeration, AAS ........ 110
Heating and Air Conditioning, AAS .... 110

HOSPITALITY
Hotel/Motel/Food Management
Specialist, AB ............... 111

HUMAN SERVICES CAREERS
Child Development, AAS ........ 112
Child Development, CA ........ 113
Gerontology, AAS ............... 114
Gerontology, CA ......... 114
Human Services, General, AAS .... 115
Substance Abuse, AAS ....... 116
Substance Abuse, CA ....... 117

INDUSTRIAL
Computerized Numerical Control
Programmer, AAS .... 118
Industrial Technology, AAS .......... 119
Industrial Technology, CA .......... 119
Machine Maintenance, AAS .......... 123
Machine Repair, AAS .......... 123
Machinist, AAS .......... 124
Tool and Die Maker, AAS .......... 124
Welding Technology, AAS .......... 125
Welding Technology, CA .......... 125

INTERIOR DESIGN
Interior Design Assistant, AAS .... 124

LANDSCAPE CAREERS
Herbiculture, AAS .............. 125
Landscape Architecture, AAS .......... 126

LEGAL ASSISTANT
Legal Assistant, AAS .......... 127
Legal Assistant, Post-Baccalaureate, AAS .... 128

MANAGEMENT
Human Resource Management, AAS .... 129
Labor Relations, AB ........... 130
Labor Relations, CA ........... 130
Management, AAS .......... 131
Management, CA .......... 131
Management, Advanced, CA .......... 132

MARKETING
Computer Sales Specialist, AB ........ 133
Field Sales and Marketing, AAS .......... 134
Field Sales and Marketing, CA .......... 134
Marketing, AAS .......... 135
Marketing, CA .......... 135

MEDIA TECHNOLOGY
Media Technology, AAS .......... 136

OFFICE CAREERS
Administrative Assistant, AAS .......... 137
Executive Secretary, AAS .......... 138
Information/Word Processing, AAS .......... 139
Information/Word Processing, CA .......... 140
Automated Office Specialist, CA .......... 140
Legal Secretary, AAS .......... 141
Medical Administrative Assistant, AAS .......... 142
Medical Transcriptionist, AAS .......... 143
Office Skills Training, CC .......... 144
Office Support, AAS .......... 144
Records Management, AAS .......... 145

PERFORMING ARTS
Dance Transfer and Dance Career, AAS .......... 146
Music Commercial Performance, AAS .......... 147
Music Transfer, AAS .......... 148
Theatre-Acting Transfer, AAS .......... 149

PHOTOGRAPHIC IMAGING
Photographic Imaging, AAS .......... 150

QUALITY ASSURANCE
Quality Assurance, AAS .......... 151
Quality Management, AAS .......... 152

REAL ESTATE
Property Valuation and Assessment
Administration, AAS .......... 153
Property Valuation and Assessment
Administration, CA .......... 153
Real Estate, AAS .......... 154
Real Estate, CA .......... 154

SCIENCE - APPLIED
Chemical Technology, AAS .......... 155
Molecular Biotechnology, AAS .......... 156
Veterinary Technology, AAS .......... 157

SIGN LANGUAGE
Sign Language Interpreter, AAS .......... 158
Sign Language Interpreter, CA .......... 159

TECHNOLOGY - GENERAL
General Technology, AAS .......... 160
TRADE/TURISIM
Tourism, Airline and Travel Agency Operation, AAS .......... 161

TRUCK DRIVER TRAINING
Truck Driver Training, CC .......... 162

KEY
AAB .......................... Associate Degree in Applied Arts
AAS .......................... Associate Degree in Applied Science
AAB .......................... Associate Degree in Business
AAB .......................... Associate Degree in Technology
AAB .......................... Associate Degree in Aviation
AAB .......................... Associate Degree in Automotive
AAB .......................... Associate Degree in Construction
AAB .......................... Associate Degree in Business
AAB .......................... Associate Degree in Civil Technology
AAB .......................... Associate Degree in Electrical Technology
AAB .......................... Associate Degree in Environmental Technology
AAB .......................... Associate Degree in Fire Science
AAB .......................... Associate Degree in Healthcare
AAB .......................... Associate Degree in Business Administration
AAB .......................... Associate Degree in International Business
AAB .......................... Associate Degree in Banking Management
AAB .......................... Associate Degree in Aviation Management
ACCOUNTING
ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 10162 (Effective Fall 1997–Summer 2002)

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 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 students may find it necessary to complete specific coursework in mathematics. For information on how to fulfill all general education requirements, see page 22.

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

REQUIREMENTS

<table>
<thead>
<tr>
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<th>TITLE</th>
<th>CREDITS</th>
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<tbody>
<tr>
<td>ACGG 210</td>
<td>Principles of Accounting I</td>
<td>4</td>
</tr>
<tr>
<td>ACGG 211</td>
<td>Principles of Accounting II</td>
<td>4</td>
</tr>
<tr>
<td>ACGG 220</td>
<td>Intermediate Accounting I</td>
<td>4</td>
</tr>
<tr>
<td>ACGG 221</td>
<td>Intermediate Accounting II</td>
<td>4</td>
</tr>
<tr>
<td>ACGG 253</td>
<td>Cost Accounting</td>
<td>4</td>
</tr>
<tr>
<td>ACGG 240</td>
<td>Federal Income Tax I</td>
<td>4</td>
</tr>
<tr>
<td>ACGG 260</td>
<td>Microcomputer Accounting Systems</td>
<td>4</td>
</tr>
<tr>
<td>LLEG 215</td>
<td>Business Law I, Basic Principles</td>
<td>3</td>
</tr>
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</table>

TOTAL: 31 CREDITS

LIMITED CHOICE REQUIREMENTS

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

<table>
<thead>
<tr>
<th>CHOICE 1: General Education Core Areas</th>
<th>12 Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Writing Core Area</td>
<td>3</td>
</tr>
<tr>
<td>Speech Communication Core Area</td>
<td>3</td>
</tr>
<tr>
<td>Science Technology Core Area</td>
<td>3</td>
</tr>
<tr>
<td>Global Perspectives and Diversity Core Area</td>
<td>3</td>
</tr>
</tbody>
</table>

CHOICE 2: Accounting Speciality Area 11-12 Credits

| ACGG 160 | Payroll Systems and Business Taxes | 2 |
| ACGG 231 | Managerial Accounting             | 4 |
| ACGG 235 | Budgeting                         | 2 |
| ACGG 241 | Federal Income Tax II             | 4 |
| ACGG 250 | Advanced Accounting               | 4 |
| ACGG 280 | Governmental Accounting           | 4 |
| ACGG 290 | Auditing                          | 3 |

CHOICE 3: Other Accounting & Business Related (See Note 1) 6 Credits

| ACGG 245 | Accounting Internship             | 2 |
| ACGG 271 | Principles of Finance             | 3 |
| INSU 265 | Principles of Risk and Insurance  | 3 |
| LLEG 219 | Advanced Business Law for Accounting Majors | 4 |

MINIMUM TOTAL 60

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

SUGGESTED COURSE SEQUENCE

<table>
<thead>
<tr>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGG 210</td>
<td>ACGG 211</td>
<td>ACGG 220</td>
<td>ACGG 211</td>
</tr>
<tr>
<td>LLEG 215</td>
<td>ACGG 260</td>
<td>ACGG 230</td>
<td>LIM, CH.</td>
</tr>
<tr>
<td>LIM, CH.</td>
<td>LIM, CH.</td>
<td>ACGG 240</td>
<td>LIM, CH.</td>
</tr>
<tr>
<td>LIM, CH.</td>
<td>LIM, CH.</td>
<td>LIM, CH.</td>
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</tbody>
</table>

ACCOUNTING
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 10714 (Effective Fall 1997–Summer 2002)

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

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDITS</th>
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</thead>
<tbody>
<tr>
<td>ACGG 160</td>
<td>Payroll Systems and Business Taxes</td>
<td>2</td>
</tr>
<tr>
<td>ACGG 210</td>
<td>Principles of Accounting I</td>
<td>4</td>
</tr>
<tr>
<td>ACGG 211</td>
<td>Principles of Accounting II</td>
<td>4</td>
</tr>
<tr>
<td>ACGG 260</td>
<td>Microcomputer Accounting Systems</td>
<td>4</td>
</tr>
<tr>
<td>OADM 215</td>
<td>Records and Information Management I</td>
<td>3</td>
</tr>
</tbody>
</table>

TOTAL: 17 CREDITS

LIMITED CHOICE REQUIREMENTS

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

<table>
<thead>
<tr>
<th>CHOICE 1: Accounting Specialty</th>
<th>2-3 Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGG 140</td>
<td>Individual Income Taxes</td>
</tr>
<tr>
<td>ACGG 235</td>
<td>Budgeting</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CHOICE 2: Word Processing</th>
<th>4 Credits</th>
</tr>
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<tbody>
<tr>
<td>CABS 114</td>
<td>WordPerfect - Beginning for DOS</td>
</tr>
<tr>
<td>CABS 115</td>
<td>WordPerfect - Advanced for DOS</td>
</tr>
<tr>
<td>CABS 119</td>
<td>Word for Windows</td>
</tr>
<tr>
<td>CABS 219</td>
<td>Advanced Microsoft Word</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CHOICE 3: Office Skills</th>
<th>3-4 Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>OADM 195</td>
<td>Human Behavior in the Workplace</td>
</tr>
<tr>
<td>OADM 216</td>
<td>Records and Information Management II</td>
</tr>
<tr>
<td>OADM 220</td>
<td>Administrative Office Management</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CHOICE 4: Written Communication</th>
<th>3-4 Credits</th>
</tr>
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<tbody>
<tr>
<td>WRIT 127</td>
<td>Business Communications</td>
</tr>
<tr>
<td>WRIT 129</td>
<td>Composition I</td>
</tr>
</tbody>
</table>

ELECTIVES

Complete the indicated number of credits in courses of your choice.

MINIMUM TOTAL 31

SUGGESTED COURSE SEQUENCE

<table>
<thead>
<tr>
<th>I</th>
<th>II</th>
<th>III</th>
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</thead>
<tbody>
<tr>
<td>ACGG 210</td>
<td>ACGG 160</td>
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<td>OADM 215</td>
<td>ACGG 260</td>
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<tr>
<td>LIM, CH.</td>
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<td>Elec.</td>
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</tbody>
</table>
ACCOUNTING, C.P.A. EXAM PREPARATION
ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 10255 (Effective Fall 1997-Summer 2002)

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 is that other accountants cannot do: 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 State of Michigan, Department of Licensing and Regulation to receive an authoritative list of requirements to sit for the C.P.A. exam.

PREREQUISITES

Students should refer to 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 students may find it necessary to complete specific coursework 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 216, telephone number (517) 483-1522.

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
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<tbody>
<tr>
<td>CODE</td>
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<tr>
<td>ACGB 210</td>
<td>Principles of Accounting I</td>
</tr>
<tr>
<td>ACGB 211</td>
<td>Principles of Accounting II</td>
</tr>
<tr>
<td>ACGB 220</td>
<td>Intermediate Accounting I</td>
</tr>
<tr>
<td>ACGB 221</td>
<td>Intermediate Accounting II</td>
</tr>
<tr>
<td>ACGB 230</td>
<td>Cost Accounting</td>
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<tr>
<td>ACGB 240</td>
<td>Federal Income Tax I</td>
</tr>
<tr>
<td>ACGB 241</td>
<td>Federal Income Tax II</td>
</tr>
<tr>
<td>ACGB 260</td>
<td>Microcomputer Accounting Systems</td>
</tr>
<tr>
<td>ACGB 290</td>
<td>Auditing</td>
</tr>
<tr>
<td>LEGL 215</td>
<td>Business Law I, Basic Principles</td>
</tr>
<tr>
<td>LEGL 219</td>
<td>Advanced Business Law for Accounting Majors</td>
</tr>
</tbody>
</table>

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 the GENERAL EDUCATION section above)

- Writing Core Area: 3 credits
- Speech Communication Core Area: 3 credits
- Science/Technology Core Area: 3 credits
- Global Perspectives and Diversity Core Area: 3 credits

**CHOICE 2: Governmental/Fund Accounting**

- ACGB 260: Advanced Accounting: 4 credits
- ACGB 280: Governmental Accounting: 4 credits

**CHOICE 3: Accounting Related**

- ACGB 231: Managerial Accounting: 4 credits
- ACGB 255: CPA Review - Tax, Managerial & Cost, Government & Not for Profit: 1 credit
- ACGB 268: CPA Review - Business Law: 1 credit
- ACGB 297: CPA Review - Auditing: 1 credit
- ACGB 298: CPA Review - Financial Accounting and Reporting: 1 credit
- ECON 201: Principles of Economics - Micro: 3 credits

**MINIMUM TOTAL:** 60 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.

<table>
<thead>
<tr>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
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<tr>
<td>LEGL 215</td>
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<td>Lim.Ch.</td>
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<tr>
<td>Lim.Ch.</td>
<td>Lim.Ch.</td>
<td>Lim.Ch.</td>
<td>Lim.Ch.</td>
</tr>
</tbody>
</table>
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 Class Schedule for course prerequisite information. Basic skills assessment and advising information may be found on page 2 of this catalog.

**GENERAL EDUCATION**

General education is an important part of this program and includes a mathematically competency requirement. To fulfill the mathematics competency requirement, some students may find it necessary to complete specific coursework 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.

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>TOTAL: 34 CREDITS</th>
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<tr>
<td>CODE</td>
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<td>Principles of Accounting I</td>
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<tr>
<td>ACCG 211</td>
<td>Principles of Accounting II</td>
</tr>
<tr>
<td>ACCG 220</td>
<td>Intermediate Accounting</td>
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<td>ACCG 230</td>
<td>Cost Accounting</td>
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<tr>
<td>ACCG 231</td>
<td>Managerial Accounting</td>
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<td>ACCG 260</td>
<td>Microcomputer Accounting Systems</td>
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<tr>
<td>QUAL 100</td>
<td>Introduction to Quality Assurance</td>
</tr>
<tr>
<td>QUAL 103</td>
<td>Probability and Statistics for Quality Assurance</td>
</tr>
<tr>
<td>QUAL 205</td>
<td>Cost of Quality</td>
</tr>
</tbody>
</table>

**LIMITED CHOICE REQUIREMENTS**

TOTAL: 27-28 CREDITS

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

**CHOICE 1: General Education Core Areas**

(See the GENERAL EDUCATION section above)

- Writing Core Area
- Speech Communication Core Area
- Science/Technology Core Area
- Global Perspectives and Diversity Core Area

12 Credits

**CHOICE 2: Accounting Related**

- Payroll Systems and Business Taxes
- Budgeting
- Federal Income Tax I
- Federal Income Tax II
- Governmental Accounting
- Auditing

9 Credits

**CHOICE 3: Quality Related**

(Choose one subchoice)

**Subchoice 3A**
- Process Control Charting
- Problem Solving Techniques

3 Credits

**Subchoice 3B**
- Introduction to Statistical Process Control
- Quality Planning and Systems Management

4 Credits

6-7 Credits

**MINIMUM TOTAL**

51 Credits

**NOTES**

1. 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.

<table>
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<td>ACCG 220</td>
<td>ACCG 231</td>
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<td>ACCG 250</td>
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</tr>
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</table>

50  LANSING COMMUNITY COLLEGE CATALOG 1997--98
ARCHITECTURAL TECHNOLOGY, COMPUTER GRAPHICS OPTION
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 10225 (Effective Fall 1997–Summer 2002)

This architectural degree option places emphasis on the development of computer aided design and drafting skills, which supplements a student's basic knowledge of architecture technology. This option provides students with a working knowledge of and the opportunity to work with the latest CAD softwares in use in today's architectural offices. Basic, advanced, and independent study courses are taught using the major computer software systems: AutoCAD, DataCAD, MicroStation, and AES. 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 students may find it necessary to complete specific coursework 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 456, telephone number (517) 483-1327.

REQUIREMENTS

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>TOTAL: 26 CREDITS</th>
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<td>TITLE</td>
</tr>
<tr>
<td>ARCH 101</td>
<td>Architectural Drafting I</td>
</tr>
<tr>
<td>ARCH 102</td>
<td>Architectural Drafting II</td>
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<tr>
<td>ARCH 111</td>
<td>Visual Communication I</td>
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<td>College Algebra I</td>
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LIMITED CHOICE REQUIREMENTS

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

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<thead>
<tr>
<th>CHOICE 1: General Education Core Areas</th>
<th>12 Credits</th>
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<tr>
<td>(See the GENERAL EDUCATION section above)</td>
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<tr>
<td>Writing Core Area</td>
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<td>Speech Communication Core Area</td>
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<tr>
<td>Science/Technology Core Area</td>
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<tr>
<td>Global Perspectives and Diversity Core Area</td>
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<table>
<thead>
<tr>
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<tr>
<td>ARCH 221</td>
<td>Architectural DataCAD I</td>
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<tr>
<td>ARCH 222</td>
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<td>ARCH 231</td>
<td>Architectural AutoCAD I</td>
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<tr>
<td>ARCH 235</td>
<td>Architectural AutoCAD Independent Study</td>
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<td>ARCH 237</td>
<td>Architectural Computer Rendering</td>
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<td>ARCH 241</td>
<td>Architectural AES Computer Graphics I</td>
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<td>ARCH 242</td>
<td>Architectural AES Computer Graphics II</td>
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<td>Architectural AES Independent Study</td>
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<td>ARCH 251</td>
<td>Architectural MicroStation I</td>
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<td>ARCH 252</td>
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<td>ARCH 255</td>
<td>MicroStation Independent Study</td>
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<table>
<thead>
<tr>
<th>CHOICE 3: History and Preservation</th>
<th>3 Credits</th>
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<tbody>
<tr>
<td>ARCH 141</td>
<td>Architectural History I</td>
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<td>ARCH 142</td>
<td>Architectural History II</td>
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<tr>
<td>ARCH 146</td>
<td>Preservation and Adaptive Reuse Architecture</td>
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</table>

<table>
<thead>
<tr>
<th>CHOICE 4: Materials, Structures and Systems</th>
<th>7–8 Credits</th>
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<tbody>
<tr>
<td>ARCH 272</td>
<td>Environmental Systems</td>
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<td>ARCH 276</td>
<td>Alternative Structures</td>
</tr>
<tr>
<td>ARCH 278</td>
<td>Energy Efficient Design</td>
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<td>ARCH 283</td>
<td>Materials of Construction</td>
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<tr>
<td>BLDT 277</td>
<td>Construction Cost Estimating</td>
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<table>
<thead>
<tr>
<th>CHOICE 5: Architectural Related (See Note 1)</th>
<th>4 Credits</th>
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</table>

MINIMUM TOTAL

70

NOTES
1. Allows completion of courses which relate to specific career preparation for the field of architectural computer graphics 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, 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.

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<thead>
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<tbody>
<tr>
<td>ARCH 101</td>
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<tr>
<td>ARCH 121</td>
<td>ARCH 271</td>
<td>Lim.Ch.</td>
<td>Lim.Ch.</td>
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<td>MATH 121</td>
<td>Lim.Ch.</td>
<td>Lim.Ch.</td>
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LANSING COMMUNITY COLLEGE CATALOG 1997-98 ● 51
ARCHITECTURE

ARCHITECTURAL TECHNOLOGY, CORE OPTION
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 1023 (Effective Fall 1997-Summer 2002)

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 in 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 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 students may find it necessary to complete specific coursework in mathematics. For information on how to fulfill all general education requirements, see page 52.

INFORMATION
Contact the Architectural Studies Center, Gammon Vocational-Technical Center, Room 450, telephone number (517) 483-1327.

REQUIREMENTS

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<thead>
<tr>
<th>CODE</th>
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<td>ARCH 121</td>
<td>Visual Communication I</td>
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<td>ARCH 201</td>
<td>Architectural Drafting III</td>
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<td>ARCH 202</td>
<td>Architectural Drafting IV</td>
<td>4</td>
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<td>ARCH 211</td>
<td>Design Studio I</td>
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<tr>
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<td>Structural Theory</td>
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TOTAL: 33 CREDITS

LIMITED CHOICE REQUIREMENTS

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<tr>
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TOTAL: 37-41 CREDITS

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

CHOICE 1: General Education Core Areas

Writing Core Area | 3
Speech Communication Core Area | 3
Science/Technology Core Area | 3
Global Perspectives and Diversity Core Area | 3

CHOICE 2: Computer Graphics

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<tr>
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<tr>
<td>ARCH 221</td>
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<td>ARCH 222</td>
<td>Architectural AutoCAD II</td>
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<td>ARCH 231</td>
<td>Architectural AutoCAD III</td>
<td>4</td>
</tr>
<tr>
<td>ARCH 232</td>
<td>Architectural AutoCAD IV</td>
<td>4</td>
</tr>
<tr>
<td>ARCH 237</td>
<td>Architectural Computer Rendering</td>
<td>3</td>
</tr>
<tr>
<td>ARCH 241</td>
<td>Architectural AES Computer Graphics I</td>
<td>4</td>
</tr>
<tr>
<td>ARCH 242</td>
<td>Architectural AES Computer Graphics II</td>
<td>4</td>
</tr>
<tr>
<td>ARCH 251</td>
<td>Architectural MicroStation</td>
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<td>ARCH 252</td>
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CHOICE 3: Materials, Structures and Systems

<table>
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<tr>
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<tbody>
<tr>
<td>ARCH 273</td>
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<td>4</td>
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<td>ARCH 276</td>
<td>Alternative Structures</td>
<td>3</td>
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<td>ARCH 278</td>
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<td>ARCH 263</td>
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</tr>
<tr>
<td>BLDT 277</td>
<td>Construction Cost Estimating</td>
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CHOICE 4: History and Preservation

<table>
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<tr>
<th>CODE</th>
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<th>CREDITS</th>
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</thead>
<tbody>
<tr>
<td>ARCH 141</td>
<td>Architectural History I</td>
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</tr>
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<td>ARCH 142</td>
<td>Architectural History II</td>
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<tr>
<td>ARCH 146</td>
<td>Preservation and Adaptive Reuse Architecture</td>
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CHOICE 5: Design

<table>
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<tr>
<td>ARCH 128</td>
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<td>ARCH 181</td>
<td>Barrier Free Design</td>
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<td>ARCH 182</td>
<td>Universal Design</td>
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<tr>
<td>ARCH 212</td>
<td>Design Studio II</td>
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<td>ARCH 213</td>
<td>Facilities Design</td>
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CHOICE 6: Architectural Related (See Note 1)

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<tr>
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<tr>
<td>BLDT 281</td>
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</table>

MINIMUM TOTAL: 70

NOTES
1. 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

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II

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<th>IV</th>
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<td>MATH 121</td>
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</table>

52 I LANSING COMMUNITY COLLEGE CATALOG 1997-98
ARCHITECTURAL TECHNOLOGY, RESIDENTIAL DESIGN OPTION
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 10758 (Effective Fall 1997–Summer 2002)

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 core disciplinary array of technology courses, preparing for work in all segments of the residential design/build 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 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 students may find it necessary to complete specific coursework 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 450, telephone number (517) 483-1327.

REQUIREMENTS

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<td>4</td>
</tr>
<tr>
<td>ARCH 121</td>
<td>Visual Communication I</td>
<td>3</td>
</tr>
<tr>
<td>ARCH 128</td>
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</tr>
<tr>
<td>ARCH 271</td>
<td>Structural Theory</td>
<td>4</td>
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<td>LAND 121</td>
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<td>MATH 121</td>
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LIMITED CHOICE REQUIREMENTS

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<td>College Algebra I</td>
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TOTAL: 26 CREDITS

NOTES
1. 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 plan on transferring to another school, or have prerequisites to fulfill, should contact an academic advisor or counselor for help with adjustments.

<table>
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TOTAL: 44–50 CREDITS

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

CHOICE 1: General Education Core Areas

(See the GENERAL EDUCATION section above)

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12 Credits

CHOICE 2: Computer Graphics

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7–8 Credits

CHOICE 3: Building Trades

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<td></td>
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</table>

7–8 Credits

LANSING COMMUNITY COLLEGE CATALOG 1997–98 53
COMPUTER GRAPHICS ANIMATION
ASSOCIATE IN APPLIED ARTS DEGREE

Curriculum Code: 10294 (Effective Fall 1997–Summer 2002)

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 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 students may find it necessary to complete specific coursework in mathematics. For information on how to fulfill all general education requirements, see page 22.

INFORMATION
Contact the Art Program, Academic and Business Facility, Room 309, telephone number (517) 483-1476.

REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
<th>TOTAL: 62 CREDITS</th>
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<tr>
<td>ARTS 102</td>
<td>2-Dimensional Design</td>
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<tr>
<td>ARTS 131</td>
<td>Drawing I</td>
</tr>
<tr>
<td>ARTS 132</td>
<td>Life Drawing</td>
</tr>
<tr>
<td>ARTS 137</td>
<td>Drawing II</td>
</tr>
<tr>
<td>ARTS 151</td>
<td>Computer Graphics Art</td>
</tr>
<tr>
<td>ARTS 162</td>
<td>Typography and Layout Indication</td>
</tr>
<tr>
<td>ARTS 171</td>
<td>Computer Graphics for Photography</td>
</tr>
<tr>
<td>ARTS 175</td>
<td>Electronic Design I</td>
</tr>
<tr>
<td>ARTS 195</td>
<td>Employment and Business Issues for Artists</td>
</tr>
<tr>
<td>ARTS 216</td>
<td>Humorous Illustration</td>
</tr>
<tr>
<td>ARTS 232</td>
<td>Computer Graphics/2-D Animation</td>
</tr>
<tr>
<td>ARTS 233</td>
<td>Computer Graphics/3-D Interactive</td>
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<tr>
<td>ARTS 234</td>
<td>Computer Graphics/3-D Animation I</td>
</tr>
<tr>
<td>ARTS 235</td>
<td>Computer Graphics/3-D Animation II</td>
</tr>
<tr>
<td>ARTS 259</td>
<td>The Portfolio</td>
</tr>
<tr>
<td>CBS 200</td>
<td>Microsoft PowerPoint/Windows</td>
</tr>
<tr>
<td>HUMS 212</td>
<td>Information Systems Technology and Problem Solving</td>
</tr>
<tr>
<td>HUMS 212</td>
<td>History of Art II</td>
</tr>
<tr>
<td>IMAG 118</td>
<td>Film Production I</td>
</tr>
<tr>
<td>IMAG 203</td>
<td>Topics in Film/Multimedia</td>
</tr>
<tr>
<td>IMAG 205</td>
<td>Topics in Hybrid Imaging</td>
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LIMITED CHOICE REQUIREMENTS

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<th>TOTAL: 6 CREDITS</th>
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**CHOICE 1: General Education Core Areas**

(See the GENERAL EDUCATION section above)

Writing Core Area
- 3 Credits
Speech: Communication Core Area
- 3 Credits
Science/Technology Core Area (See Note 1)
- 0 Credits
Global Perspectives and Diversity Core Area (See Note 1)
- 0 Credits

**MINIMUM TOTAL**

- 6 Credits

**NOTES**

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.

<table>
<thead>
<tr>
<th>I</th>
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<tr>
<td>ARTS 102</td>
<td>ARTS 132</td>
<td>ARTS 137</td>
<td>ARTS 175</td>
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<td>ARTS 131</td>
<td>ARTS 195</td>
<td>ARTS 215</td>
<td>ARTS 232</td>
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<td>IMAG 118</td>
<td>ARTS 162</td>
<td>HUMS 212</td>
<td>ARTS 234</td>
</tr>
<tr>
<td>Lim.Ch.</td>
<td>ARTS 171</td>
<td>Lim.Ch.</td>
<td>CBS 200</td>
</tr>
<tr>
<td>IMAG 203</td>
<td>IMAG 205</td>
<td>IMAG 205</td>
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</tr>
</tbody>
</table>
COMPUTER GRAPHICS, MULTIMEDIA
ASSOCIATE IN APPLIED ARTS DEGREE

Curriculum Code: 10194 (Effective Fall 1997–Summer 2002)

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 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 students may find it necessary to complete specific coursework in mathematics. For information on how to fulfill all general education requirements, see page 22.

INFORMATION
Contact the Art Program, Academic and Office Facility, Room 309, telephone number (517) 483-1476.

REQUIREMENTS

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<td>Drawing I</td>
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<td>Computer Graphic Art</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 171</td>
<td>Computer Graphics for Photography</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 232</td>
<td>Computer Graphics/2-D Animation</td>
<td>3</td>
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<td>ARTS 233</td>
<td>Computer Graphics/3-D Interactive</td>
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<td>ARTS 234</td>
<td>Computer Graphics/3-D Animation</td>
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<td>ARTS 235</td>
<td>Computer Graphics/3-D Animation II</td>
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<tr>
<td>ARTS 236</td>
<td>The Portfolio</td>
<td>2</td>
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<tr>
<td>CISB 200</td>
<td>Information Systems Technology and Problem Solving</td>
<td>3</td>
</tr>
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<td>CISB 258</td>
<td>Developing Multimedia Home Pages for the WWW</td>
<td>2</td>
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<tr>
<td>IMAG 118</td>
<td>Film Production</td>
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<td>IMAG 263</td>
<td>Topics in Film/Multimedia</td>
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<td>IMAG 265</td>
<td>Topics in Hybrid Imaging</td>
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LIMITED CHOICE REQUIREMENTS

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<td>IMAG 118</td>
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<td>ARTS 195</td>
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<td>ARTS 269</td>
<td>IMAG 203</td>
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<td>IMAG 112</td>
<td>ARTS 131</td>
<td>ARTS 151</td>
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<td>IMAG 113</td>
<td>IMAG 114</td>
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<td>ARTS 171</td>
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<tr>
<td>Lim.Ch.</td>
<td>Lim.Ch.</td>
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CHOICE 1: General Education Core Areas
(See the GENERAL EDUCATION section above)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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<tbody>
<tr>
<td>Writing Core Area</td>
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<tr>
<td>Speech Communication Core Area</td>
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<tr>
<td>Science/Technology Core Area (See Note 1)</td>
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<tr>
<td>Global Perspectives and Diversity Core Area</td>
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9 Credits

CHOICE 2: Electronic Design

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<tr>
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<tr>
<td>ARWS 132</td>
<td>Introduction to Quark Express</td>
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<tr>
<td>ARWS 133</td>
<td>Introduction to PageMaker</td>
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</table>

1 Credit

CHOICE 3: Basic Photography

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<tr>
<td>IMAG 101</td>
<td>Basic Photography for Non-Majors</td>
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<tr>
<td>IMAG 11</td>
<td>Introduction to Photographic Technology I</td>
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2-4 Credits

CHOICE 4: Specialty (Choose one subchoice)

Subchoice 4A: Art Specialty

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<tr>
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<tr>
<td>ARTS 132</td>
<td>Life Drawing</td>
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<td>ARTS 137</td>
<td>Drawing II</td>
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<td>ARTS 195</td>
<td>Employment and Business Issues for Artists</td>
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<td>ARTS 216</td>
<td>Humorous Illustration I</td>
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<td>CISB 119</td>
<td>Introduction to Windows Programming With Visual BASIC</td>
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15-18 Credits

Subchoice 4B: Photography Specialty

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<tr>
<td>IMAG 112</td>
<td>Design Fundamentals for Imaging Technologies</td>
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<td>IMAG 113</td>
<td>Lighting Concepts and Applications</td>
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<td>IMAG 114</td>
<td>Introduction to Photographic Color Technology</td>
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<td>IMAG 121</td>
<td>Imaging Technology</td>
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<tr>
<td>IMAG 224</td>
<td>Emerging Image Technologies I</td>
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<tr>
<td>IMAG 233</td>
<td>The Business of Photography: Practices and Directions</td>
</tr>
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</table>

3 Credits

NOTES
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.
FINE ART FOUNDATION
ASSOCIATE IN APPLIED ARTS DEGREE

Curriculum Code: 10271 (Effective Fall 1997–Summer 2002)

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 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 students may find it necessary to complete specific coursework in mathematics. For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Art Program, Academic and Office Facility, Room 309, telephone number (517) 483-1475.

REQUIREMENTS

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<td>2-Dimensional Design</td>
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<td>ARTS 103</td>
<td>3-Dimensional Design</td>
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<td>ARTS 131</td>
<td>Drawing I</td>
<td>3</td>
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<td>ARTS 132</td>
<td>Life Drawing (See Note 1)</td>
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<tr>
<td>ARTS 140</td>
<td>Printmaking I</td>
<td>3</td>
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<tr>
<td>ARTS 145</td>
<td>Screen Printing I</td>
<td>3</td>
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<tr>
<td>ARTS 190</td>
<td>Matting and Framing Techniques</td>
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<tr>
<td>ARTS 200</td>
<td>Painting I</td>
<td>3</td>
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<tr>
<td>ARTS 204</td>
<td>Watercolor I</td>
<td>3</td>
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<tr>
<td>HUMS 211</td>
<td>History of Art I</td>
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<tr>
<td>HUMS 212</td>
<td>History of Art II</td>
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TOTAL: 36 CREDITS

LIMITED CHOICE REQUIREMENTS

| TOTAL: 30 CREDITS |

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

CHOICE 1: General Education Core Areas

(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

CHOICE 2: Art

- Drawing II 3
- Printmaking II 3
- Screen Printing II 3
- Computer Graphic Art 3
- Computer Graphics for Photography 3
- Employment and Business Issues for Artists 2
- Painting II 3
- Figure Painting 3
- Watercolor II 3
- Advanced Watercolor 3
- The Portfolio 2

MINIMUM TOTAL 66

NOTES

1. ARTS 132 must be taken two times for a total of 6 credits.

2. Students completing REQUIREMENTS have fulfilled the requirements for the 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 to courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

<table>
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<tr>
<th>I</th>
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<tr>
<td>ARTS 102</td>
<td>ARTS 133</td>
<td>ARTS 132</td>
<td>ARTS 190</td>
</tr>
<tr>
<td>ARTS 131</td>
<td>ARTS 132</td>
<td>HUMS 212</td>
<td>ARTS 204</td>
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<td>ARTS 140</td>
<td>ARTS 200</td>
<td>Lim Ch. 1</td>
<td>Lim Ch. 1</td>
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<tr>
<td>ARTS 145</td>
<td>HUMS 211</td>
<td>Lim Ch. 2</td>
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<td>Lim Ch. 1</td>
<td>Lim Ch. 2</td>
<td>Lim Ch. 2</td>
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</tr>
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</table>
GRAPHIC DESIGN
ASSOCIATE IN APPLIED ARTS DEGREE

Curriculum Code: 10219 (Effective Fall 1997–Summer 2002)

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. Artists 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 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 students may find it necessary to complete specific coursework in mathematics. For information on how to fulfill all general education requirements, see page 22.

INFORMATION
Contact the Art Program, Academic and Office Facility, Room 309, telephone number (517) 483-1476.

REQUIREMENTS

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<tr>
<th>COURSE</th>
<th>TITLE</th>
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<td>ARTS 102</td>
<td>2-Dimensional Design</td>
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<td>ARTS 131</td>
<td>Drawing I</td>
<td>3</td>
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<tr>
<td>ARTS 132</td>
<td>Life Drawing</td>
<td>3</td>
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<tr>
<td>ARTS 137</td>
<td>Drawing II</td>
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<td>ARTS 182</td>
<td>Typography and Layout Indication</td>
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<td>ARTS 171</td>
<td>Computer Graphics for Photography</td>
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<td>ARTS 175</td>
<td>Electronic Design I</td>
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</tr>
<tr>
<td>ARTS 176</td>
<td>Electronic Design II</td>
<td>3</td>
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<td>ARTS 177</td>
<td>Computer PrePress Production Techniques</td>
<td>3</td>
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<td>ARTS 180</td>
<td>Graphic Design I</td>
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<tr>
<td>ARTS 181</td>
<td>Graphic Design II</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 182</td>
<td>Graphic Design III</td>
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<tr>
<td>ARTS 195</td>
<td>Employment and Business Issues for Artists</td>
<td>2</td>
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<td>ARTS 269</td>
<td>The Portfolio</td>
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<tr>
<td>ARTS 281</td>
<td>Art Internship</td>
<td>3</td>
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<tr>
<td>ARWS 132</td>
<td>Introduction to Quark Express</td>
<td>1</td>
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<tr>
<td>CABS 195</td>
<td>Microsoft Windows</td>
<td>2</td>
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<td>HUMS 211</td>
<td>History of Art I</td>
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<td>HUMS 212</td>
<td>History of Art II</td>
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<td>IMAG 205</td>
<td>Topics In Hybrid Imaging</td>
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<tr>
<td>MKTG 140</td>
<td>Introduction to Advertising</td>
<td>3</td>
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TOTAL: 90 CREDITS

LIMITED CHOICE REQUIREMENTS

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

MINIMUM TOTAL 69

NOTES
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.

| ARTS 102 | ARTS 132 | ARTS 171 | ARTS 177 |
| ARTS 131 | ARTS 137 | ARTS 176 | ARTS 182 |
| ARTS 182 | ARTS 175 | ARTS 161 | ARTS 281 |
| HUMS 211 | ARTS 180 | ARWS 132 | CABS 195 |
| Um.Ch. | HUMS 212 | MKTG 140 | IMAG 205 |
ILLUSTRATION
ASSOCIATE IN APPLIED ARTS DEGREE

Curriculum Code: 10285 (Effective Fall 1997–Summer 2002)

An illustrator generally works with a graphic designer, art director, editor, or author to provide pictorial elements called for in visual communication. Illustrators may use a variety of traditional drawing and painting techniques and also employ photography and computer tools. The work of illustrators is found in every visual communication media from printed material to CD-ROM. Creative problem-solving along with good design and drawing skills are essential to an illustrator's success. Illustrators are primarily self-employed professionals or freelance artists working with many organizations. 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 6 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 students may find it necessary to complete specific coursework in mathematics. For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Art Program, Academic and Office Facility, Room 309, telephone number (517) 483-1476.

REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
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<tr>
<td>ARTS 102</td>
<td>2-Dimensional Design</td>
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<tr>
<td>ARTS 131</td>
<td>Drawing I</td>
<td>3</td>
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<tr>
<td>ARTS 132</td>
<td>Life Drawing (See Note 1)</td>
<td>3</td>
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<tr>
<td>ARTS 157</td>
<td>Drawing II</td>
<td>3</td>
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<tr>
<td>ARTS 181</td>
<td>Computer Graphic Art</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 162</td>
<td>Typography and Layout Indication</td>
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</tr>
<tr>
<td>ARTS 171</td>
<td>Computer Graphics for Photography</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 195</td>
<td>Employment and Business Issues for Artists</td>
<td>2</td>
</tr>
<tr>
<td>ARTS 200</td>
<td>Painting I</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 201</td>
<td>Painting II</td>
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<tr>
<td>ARTS 203</td>
<td>Figure Painting</td>
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<td>ARTS 204</td>
<td>Watercolor I</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 213</td>
<td>Illustration/Black and White</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 214</td>
<td>Illustration/Color</td>
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<tr>
<td>ARTS 262</td>
<td>Advanced Illustration</td>
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<td>ARTS 269</td>
<td>The Portfolio</td>
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<tr>
<td>HUMS 212</td>
<td>History of Art II</td>
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LIMITED CHOICE REQUIREMENTS

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

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<thead>
<tr>
<th>CHOICE 1: General Education Core Areas</th>
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<td>Speech Communication Core Area</td>
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<td>Science/Technology Core Area</td>
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<td>Global Perspectives and Diversity Core Area (See Note 2)</td>
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<table>
<thead>
<tr>
<th>CHOICE 2: Art (Choose 1 Subchoice)</th>
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<tr>
<td>Subchoice 2A:</td>
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<tr>
<td>ARTS 143</td>
<td>Printmaking I</td>
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<tr>
<td>ARTS 145</td>
<td>Screen Printing I</td>
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<tr>
<td>Subchoice 2B:</td>
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<td>ARTS 205</td>
<td>Watercolor II</td>
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<td>ARTS 206</td>
<td>Advanced Watercolor</td>
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<tr>
<td>Subchoice 2C:</td>
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<tr>
<td>ARTS 221</td>
<td>Airbrush Techniques I</td>
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<tr>
<td>ARTS 222</td>
<td>Airbrush Techniques II</td>
</tr>
<tr>
<td>Subchoice 2D:</td>
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<tr>
<td>ARTS 216</td>
<td>Humorous Illustration I</td>
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<tr>
<td>ARTS 217</td>
<td>Humorous Illustration II</td>
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</tbody>
</table>

MINIMUM TOTAL: 68 CREDITS

NOTES

1. ARTS 132 must be taken two times for a total of 6 credits.
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.
AUTO BODY REPAIR
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 10188 (Effective Fall 1997–Summer 2002)

Auto body repair technicians possess the necessary skills to perform collision repair and refinishing according to the “manufacturers specifications.” Using hand and power tools, they straighten bent frames and body sections, replace 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 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 students may find it necessary to complete specific coursework 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 220, telephone number (517) 483-1336.

REQUIREMENTS

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<td>AUTO 110</td>
<td>Auto Electrical Theory</td>
<td>5</td>
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<tr>
<td>AUTO 150</td>
<td>Automotive Suspension</td>
<td>2.5</td>
</tr>
<tr>
<td>AUTO 160</td>
<td>Auto Air Conditioning</td>
<td>2.5</td>
</tr>
<tr>
<td>AUTO 180</td>
<td>Auto Body Welding/Metal Finishing</td>
<td>5</td>
</tr>
<tr>
<td>AUTO 182</td>
<td>Major Collision Repair</td>
<td>5</td>
</tr>
<tr>
<td>AUTO 184</td>
<td>Unibody and Frame Repair</td>
<td>2.5</td>
</tr>
<tr>
<td>AUTO 185</td>
<td>Basic Auto Painting</td>
<td>2.5</td>
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<tr>
<td>AUTO 186</td>
<td>Advanced Painting</td>
<td>5</td>
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<td>AUTO 188</td>
<td>Auto Body Repair and Painting</td>
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<tr>
<td>AUTO 255</td>
<td>Automotive Internship</td>
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LIMITED CHOICE REQUIREMENTS

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<td>Engine Performance/Tune-Up</td>
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<tr>
<td>AUTO 225</td>
<td>Automotive Computers</td>
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MINIMUM TOTAL: 64

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason have 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.

<table>
<thead>
<tr>
<th>I</th>
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<td>AUTO 160</td>
<td>AUTO 158</td>
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<td>AUTO 182</td>
<td>AUTO 166</td>
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<td>AUTO 180</td>
<td>AUTO 184</td>
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<td>Lim.Ch.</td>
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<tr>
<td>AUTO 185</td>
<td>Lim.Ch.</td>
<td>Lim.Ch.</td>
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AUTO BODY REPAIR
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 10166 (Effective Fall 1997–Summer 2002)

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

<table>
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<tr>
<td>AUTO 190</td>
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<td>AUTO 180</td>
<td>Auto Body Welding/Metal Finishing</td>
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</tr>
<tr>
<td>AUTO 182</td>
<td>Major Collision Repair</td>
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</tr>
<tr>
<td>AUTO 184</td>
<td>Unibody and Frame Repair</td>
<td>2.5</td>
</tr>
<tr>
<td>AUTO 185</td>
<td>Basic Auto Painting</td>
<td>2.5</td>
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<tr>
<td>AUTO 186</td>
<td>Advanced Painting</td>
<td>5</td>
</tr>
<tr>
<td>AUTO 188</td>
<td>Auto Body Repair and Painting (See Note 1)</td>
<td>4</td>
</tr>
<tr>
<td>MATH 050</td>
<td>Mathematics-Principles and Practices</td>
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MINIMUM TOTAL: 31

NOTES
1. AUTO 188 may be repeated for additional credit.

SUGGESTED COURSE SEQUENCE

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<thead>
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</thead>
<tbody>
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<td>AUTO 180</td>
<td>AUTO 184</td>
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<td>AUTO 185</td>
<td>AUTO 186</td>
</tr>
<tr>
<td>MATH 050</td>
<td>AUTO 188</td>
</tr>
</tbody>
</table>
AUTOMOTIVE TECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 10236 (Effective Fall 1997–Summer 2002)

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 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 students may find it necessary to complete specific coursework 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 228, telephone number (517) 480-1390.

REQUIREMENTS

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<th>CODE</th>
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</tr>
<tr>
<td>AUTO 110</td>
<td>Auto Electrical Theory</td>
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<tr>
<td>AUTO 120</td>
<td>Auto Drive Train</td>
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<tr>
<td>AUTO 121</td>
<td>Automatic Transmissions</td>
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</tr>
<tr>
<td>AUTO 122</td>
<td>Advanced Transmission</td>
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<td>AUTO 130</td>
<td>Automotive Engines</td>
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<td>AUTO 140</td>
<td>Automotive Brakes</td>
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<td>AUTO 150</td>
<td>Automotive Suspension</td>
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</tr>
<tr>
<td>AUTO 160</td>
<td>Auto Air Conditioning</td>
<td>2.5</td>
</tr>
<tr>
<td>AUTO 215</td>
<td>Engine Performance/Tune-Up</td>
<td>5</td>
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<tr>
<td>AUTO 225</td>
<td>Automotive Computers</td>
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<td>AUTO 230</td>
<td>Anti-Lock Braking Systems</td>
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<tr>
<td>WRT 124</td>
<td>Technical Writing</td>
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</table>

LIMITED CHOICE REQUIREMENTS

| TOTAL: 18 CREDITS |

Complete the indicated number of credits from each CHOICE listed below:

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

- Writing Core Area (See Note 1) 3
- Speech Communication Core Area 3
- Science/Technology Core Area 3
- Global Perspectives and Diversity Core Area 3

**CHOICE 2:** Automotive Related

- Small Engine Repair 2.5
- Auto Body Welding/Metal Finishing 5
- Basic Auto Painting 2.5
- Automotive Service Laboratory 6
- Automotive Internship 6
- Machine Tool Survey 3
- Metallurgy and Heat Treat 4

**MINIMUM TOTAL** 62

**NOTES**
1. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.

SUGGESTED COURSE SEQUENCE

<table>
<thead>
<tr>
<th>I</th>
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<th>IV</th>
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<td>AUTO 163</td>
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</table>

AUTOMOTIVE TECHNOLOGY
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 10140 (Effective Fall 1997–Summer 2002)

The certificate 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.

**REQUIREMENTS**

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<td>AUTO 160</td>
<td>Auto Air Conditioning</td>
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<td>AUTO 215</td>
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<td>AUTO 225</td>
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<td>AUTO 280</td>
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<td>MATH 050</td>
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**MINIMUM TOTAL** 35.5

SUGGESTED COURSE SEQUENCE

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<td>AUTO 280</td>
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</table>

60 LANSING COMMUNITY COLLEGE CATALOG 1997–98
AIRFRAME MAINTENANCE TECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 10757 (Effective Fall 1997-Summer 2002)

Airframe Maintenance Technicians maintain aircraft in accordance with the Federal Aviation Regulations. Technicians perform inspections, repairs, and alterations to sheet metal and composite aircraft structures, and their related systems. In addition, they troubleshoot the operation of hydraulic, pneumatic, ice and rain, landing gear, fire protection, fuel, atmospheric control, communication and navigation, flight control, electrical, and other associated 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 Class Schedule for course prerequisite information. Basic skills assessment and advising information may be found on page 6 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 students may find it necessary to complete specific coursework 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) 483-4005.

REQUIREMENTS

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<td>AVAF 126</td>
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<td>Aircraft Instruments</td>
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<td>Aircraft Structures I</td>
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<td>WELD 210</td>
<td>Aircraft Welding</td>
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TOTAL: 56 CREDITS

LIMITED CHOICE REQUIREMENTS

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

MINIMUM TOTAL 68

NOTES
1. Students must complete each course with a minimum grade of 70 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.
AVIATION FLIGHT TECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 10259 (Effective Fall 1997–Summer 2002)

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 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 students may find it necessary to complete specific coursework 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) 483-1486.

REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
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<tbody>
<tr>
<td>AVFT 201</td>
<td>Flight Training I</td>
<td>7.5</td>
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<tr>
<td>AVFT 202</td>
<td>Flight Training II</td>
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<td>AVFT 203</td>
<td>Flight Training III</td>
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<td>AVFT 204</td>
<td>Flight Training IV</td>
<td>5</td>
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<tr>
<td>AVGS 101</td>
<td>Private Pilot Ground School</td>
<td>4</td>
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<tr>
<td>AVGS 121</td>
<td>Aviation Meteorology</td>
<td>4</td>
</tr>
<tr>
<td>AVGS 211</td>
<td>Instrument Pilot Ground School</td>
<td>4</td>
</tr>
<tr>
<td>AVGS 221</td>
<td>Commercial Pilot Ground School</td>
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<tr>
<td>AVPP 105</td>
<td>Preventive Maintenance</td>
<td>2</td>
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<tr>
<td>AVST 211</td>
<td>Flight Simulator I</td>
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<td>AVST 213</td>
<td>Flight Simulator III</td>
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<td>AVST 214</td>
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TOTAL: 45 CREDITS

LIMITED CHOICE REQUIREMENTS

<table>
<thead>
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<tbody>
<tr>
<td>AVFT 205</td>
<td>CF Flight Training</td>
<td>3.5</td>
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<tr>
<td>AVFT 206</td>
<td>Flight Instructor Instrument Flight Training</td>
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</tr>
<tr>
<td>AVFT 207</td>
<td>Multi-Engine Flight Training</td>
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<tr>
<td>AVFT 208</td>
<td>Multi-Engine Instructor Flight Training</td>
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<tr>
<td>AVFT 224</td>
<td>Tail Wheel Transition</td>
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<td>AVGS 222</td>
<td>Flight Instructor Ground School</td>
<td>4</td>
</tr>
<tr>
<td>AVST 215</td>
<td>Multi-Engine Flight Simulator</td>
<td>1</td>
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</table>

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

CHOICE 2: Advanced Flight Training 10 Credits
  AVFT 205 | CF Flight Training               | 3.5          |
  AVFT 206 | Flight Instructor Instrument Flight Training | 2.5          |
  AVFT 207 | Multi-Engine Flight Training    | 1.5          |
  AVFT 208 | Multi-Engine Instructor Flight Training | 0.75          |
  AVFT 224 | Tail Wheel Transition           | 1            |
  AVGS 222 | Flight Instructor Ground School | 4            |
  AVST 215 | Multi-Engine Flight Simulator   | 1            |

MINIMUM TOTAL 67

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.

<table>
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<th>I</th>
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<td>AVFT 201</td>
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<td>AVFT 303</td>
<td>AVFT 204</td>
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<td>AVST 211</td>
<td>AVST 212</td>
<td>AVPP 185</td>
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</table>

Lim.Ch.
AVIONICS
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 10260 (Effective Fall 1997–Summer 2002)

Avionics 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 Radio/telephone 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 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 students may find it necessary to complete specific coursework 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) 483-1468.

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>COURSE CODE</th>
<th>COURSE TITLE</th>
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<th>CREDIT HOURS</th>
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<tbody>
<tr>
<td>AVEF 130</td>
<td>Avionics Airframe Applications</td>
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<td>AVEL 150</td>
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<tr>
<td>AVEL 151</td>
<td>Avionics Installation and Generation Lab</td>
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<td>AVEL 190</td>
<td>Receiver Troubleshooting</td>
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<td>AVEL 191</td>
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<tr>
<td>AVEL 220</td>
<td>Avionics Systems I</td>
<td>3</td>
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<td>AVEL 221</td>
<td>Avionics Systems I Lab</td>
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<td>AVEL 225</td>
<td>Avionics Licensing and Regulations</td>
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<td>AVEL 226</td>
<td>FAA Rules and Regulations for Avionics Technicians</td>
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<td>AVEL 230</td>
<td>Avionics Systems II</td>
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<td>AVEL 140</td>
<td>Avionics Instruments I</td>
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<td>ELCT 101</td>
<td>Analog Problems</td>
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<td>ELCT 109</td>
<td>DC Circuits</td>
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<td>AC Circuits</td>
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<td>Transistors</td>
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<td>ELCT 120</td>
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<td>ELCT 130</td>
<td>Machine Language Programming</td>
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<td></td>
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<tr>
<td>ELCT 131</td>
<td>Digital Basics</td>
<td>2</td>
<td></td>
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<tr>
<td>ELCT 211</td>
<td>Linear Circuits I</td>
<td>4</td>
<td></td>
<td></td>
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<tr>
<td>ELCT 212</td>
<td>Linear Circuits II</td>
<td>4</td>
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<tr>
<td>ELCT 231</td>
<td>Advanced Digital Electronics</td>
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</table>

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

CHOICE 1: General Education Core Areas

<table>
<thead>
<tr>
<th>CHOICE 1: General Education Core Areas</th>
<th>TOTAL CREDITS</th>
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<tbody>
<tr>
<td>Writing Core Area</td>
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<tr>
<td>Speech Communication Core Area</td>
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<tr>
<td>Science/Technology Core Area</td>
<td>3</td>
</tr>
<tr>
<td>Global Perspectives and Diversity Core Area</td>
<td>3</td>
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</tbody>
</table>

MINIMUM TOTAL: 74

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.

<table>
<thead>
<tr>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
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</thead>
<tbody>
<tr>
<td>AVEF 130</td>
<td>AVEL 150</td>
<td>AVEL 190</td>
<td>AVEL 220</td>
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<tr>
<td>AVEL 140</td>
<td>AVEL 151</td>
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<td>ELCT 101</td>
<td>ELCT 112</td>
<td>AVEL 200</td>
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<td>ELCT 109</td>
<td>ELCT 130</td>
<td>AVEL 201</td>
<td>ELCT 231</td>
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<tr>
<td>ELCT 110</td>
<td>ELCT 131</td>
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<tr>
<td>ELCT 120</td>
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<td></td>
<td></td>
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</tbody>
</table>

V

| AVEL 225 |
| AVEL 226 |
| AVEL 230 |
| AVEL 231 |
| ELCT 212 |
| Lim.Ch.  |
| Lim.Ch.  |
POWERPLANT MAINTENANCE TECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 10745 (Effective Fall 1997–Summer 2002)

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 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 students may find it necessary to complete specific coursework 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.

REQUIRED 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.

<table>
<thead>
<tr>
<th>Course Code</th>
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<tr>
<td>AVGM 110</td>
<td>Aircraft Electrical II</td>
<td>4</td>
</tr>
<tr>
<td>AVGM 111</td>
<td>Aviation General I</td>
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</tr>
<tr>
<td>AVGM 112</td>
<td>Aviation General II</td>
<td>5</td>
</tr>
<tr>
<td>AVGM 113</td>
<td>Aviation General III</td>
<td>4</td>
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<tr>
<td>AVGM 114</td>
<td>Material and Processes</td>
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<tr>
<td>AVPP 241</td>
<td>Reciprocating Engine</td>
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<tr>
<td>AVPP 251</td>
<td>Reciprocating Engine Systems</td>
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<tr>
<td>AVPP 253</td>
<td>Reciprocating Ignition Systems</td>
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<tr>
<td>AVPP 255</td>
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</tr>
<tr>
<td>AVPP 257</td>
<td>Aircraft Propeller Systems</td>
<td>4</td>
</tr>
<tr>
<td>AVPP 259</td>
<td>Turbine Engine I</td>
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</tr>
<tr>
<td>AVPP 261</td>
<td>Turbine Engine II</td>
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<td>AVPP 263</td>
<td>Turbine Engine Systems</td>
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<tr>
<td>AVPP 255</td>
<td>Powerplant Instruments</td>
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<tr>
<td>AVPP 257</td>
<td>National Powerplant Certification Procedures</td>
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LIMITED CHOICE REQUIREMENTS

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)

<table>
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<tr>
<th>Course Title</th>
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<tbody>
<tr>
<td>Writing Core Area</td>
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<td>Speech Communication Core Area</td>
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</tr>
<tr>
<td>Science/Technology Core Area</td>
<td>3</td>
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<tr>
<td>Global Perspectives and Diversity Core Area</td>
<td>3</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL

71

NOTES

1. Students must complete each course with a minimum grade of 70 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.
BANKING MANAGEMENT, AIB DIPLOMA PROGRAM
ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 10139 (Effective Fall 1997–Summer 2002)

A bank manager is responsible for the smooth, profitable, and efficient functioning of their financial institution. Bank managers must have knowledge of various aspects of the management of a bank, including accounting, human resources, and the law. Students who have completed this program will fulfill the requirements for these Core areas.

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 this requirement, students may select one of the following courses: MATH 105, MATH 110, MATH 115, or MATH 120. For more information on how to fulfill this requirement, contact the Business Programs Office.

INFORMATION

Contact the Business Programs Office, Old Central Building, Room 210, telephone number (517) 485-5222.

REQUIREMENTS

<table>
<thead>
<tr>
<th>COURSE</th>
<th>TITLE</th>
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<tbody>
<tr>
<td>ACCG 210</td>
<td>Principles of Accounting I</td>
<td>4</td>
</tr>
<tr>
<td>AIBL 101</td>
<td>Principles of Banking</td>
<td>3</td>
</tr>
<tr>
<td>AIBL 206</td>
<td>Money and Banking</td>
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<tr>
<td>BUSN 118</td>
<td>Introduction to Business</td>
<td>3</td>
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<tr>
<td>Csis 200</td>
<td>Information Systems Technology and Problem Solving</td>
<td>3</td>
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<tr>
<td>MGMT 225</td>
<td>Principles of Management</td>
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<tr>
<td>MGMT 234</td>
<td>Diversity in the Workplace: A Domestic &amp; Global Perspective</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 200</td>
<td>Principles of Marketing</td>
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<td>SPCH 110</td>
<td>Oral Communication in the Workplace</td>
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<td>WRIT 127</td>
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LIMITED CHOICE REQUIREMENTS

Complete the indicated number of credits from each category listed below.

CHOICE 1: General Education Core Areas (See Note 1) 0 Credits

(See the GENERAL EDUCATION section above)

- Writing Core Area
- Speech Communication Core Area
- Science/Technology Core Area
- Global Perspectives and Diversity Core Area

CHOICE 2: Banking Related (See Note 2) 17 Credits

CHOICE 3: Computer Related (See Note 3) 4-5 Credits

CHOICE 4: Economics 3 Credits

AIBL 120 Economics for Bankers
ECON 140 Current Economic Issues
ECON 201 Principles of Economics - Micro

CHOICE 5: Business/Management Related (See Note 4) 5 Credits

MINIMUM TOTAL 51

NOTES

1. Students completing REQUIREMENTS have fulfilled the requirements for these Core areas.

2. Choose courses with an AIBL prefix that are not already used to meet degree requirements. REAL 275 may also be chosen.

3. Choose CABS-prefix courses of 110 or above and/or CISO-prefix courses of 100 or above.

4. Choose course with a prefix of BUS and/or MGMT not already used to meet degree requirements. Up to 3 credits total from the CABS prefix may be used. (MGMT 240 through MGMT 270). ACCG 211 and/or ECON 202 may also be chosen to fulfill this requirement.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who have completed this program will fulfill the requirements for these Core areas. Additional education enhances an individual's employment opportunities.

<table>
<thead>
<tr>
<th>COURSE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
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<tr>
<td>ACCG 210</td>
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<td>AIBL 101</td>
<td>Principles of Banking</td>
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<tr>
<td>BUSN 118</td>
<td>Introduction to Business</td>
<td>3</td>
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<tr>
<td>MGMT 225</td>
<td>Principles of Management</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 200</td>
<td>Principles of Marketing</td>
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</table>

BANKING MANAGEMENT, AIB DIPLOMA PROGRAM
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 10126 (Effective Fall 1997–Summer 2002)

Certificate holders may improve their opportunities for advancement in this or a related area. Additional education enhances an individual’s employment opportunities.

REQUIREMENTS

<table>
<thead>
<tr>
<th>COURSE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
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<tr>
<td>ACCG 210</td>
<td>Principles of Accounting I</td>
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</tr>
<tr>
<td>AIBL 101</td>
<td>Principles of Banking</td>
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<td>BUSN 118</td>
<td>Introduction to Business</td>
<td>3</td>
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<td>CABS 110</td>
<td>Microsoft Office</td>
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<td>MGMT 225</td>
<td>Principles of Management</td>
<td>3</td>
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<tr>
<td>MKTG 200</td>
<td>Principles of Marketing</td>
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</table>

LIMITED CHOICE REQUIREMENTS

Complete the indicated number of credits from each category listed below.

CHOICE 1: Banking Related (See Note 1) 8 Credits

CHOICE 2: Economics 3 Credits

AIBL 120 Economics for Bankers
ECON 140 Current Economic Issues
ECON 201 Principles of Economics - Micro

MINIMUM TOTAL 30

NOTES

1. Students completing REQUIREMENTS have fulfilled the requirements for these Core areas.

SUGGESTED COURSE SEQUENCE

<table>
<thead>
<tr>
<th>COURSE</th>
<th>TITLE</th>
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<td>BUSN 118</td>
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<td>CABS 110</td>
<td>MKTG 200</td>
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<td>Lim.Ch.</td>
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BUILDING MAINTENANCE
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 10211 (Effective Fall 1997–Summer 2002)

Building maintenance workers are required to maintain the aesthetic and structural integrity of buildings. These include houses, apartments and commercial, industrial, and institutional buildings. They may be responsible for maintenance and upkeep of all mechanical, plumbing, and electrical equipment, as well as grounds-keeping. They should also be versatile enough to do routine painting, drywall, plastering, woodworking, pool and lawn maintenance, as well as some custodial work. Building maintenance workers can either be self-employed or work for apartment complexes, hospitals, office complexes, hotels, schools, commercial buildings, or restaurants.

PREREQUISITES
Students should see the Course Descriptions section of this catalog or the Class Schedule for course prerequisite information. Basic skills assessment and advisory 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 students may find it necessary to complete specific coursework 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 220, telephone number (617) 483-1336.

REQUIREMENTS

<table>
<thead>
<tr>
<th>REQUIRED</th>
<th>TOTAL: 53 CREDITS</th>
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<tr>
<td>CODE</td>
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<tr>
<td>BLDR 101</td>
<td>Basic Woodworking</td>
</tr>
<tr>
<td>BLDR 123</td>
<td>Basic Painting and Decorating</td>
</tr>
<tr>
<td>BLDR 132</td>
<td>General Home Maintenance</td>
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<tr>
<td>BLDT 121</td>
<td>Residential Framing and Foundations</td>
</tr>
<tr>
<td>BLDT 125</td>
<td>Interior Carpentry</td>
</tr>
<tr>
<td>ELTE 100</td>
<td>Electrical Safety Practices</td>
</tr>
<tr>
<td>ELTE 112</td>
<td>Basic Wiring Installation (See Note 1)</td>
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<tr>
<td>HORT 105</td>
<td>Pests and Problems of Ornamental Plants</td>
</tr>
<tr>
<td>HVAC 100</td>
<td>Fundamentals of Heating, Ventilating and Air Conditioning</td>
</tr>
<tr>
<td>HVAC 105</td>
<td>Sheet Metal Fabrication and Installation</td>
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<tr>
<td>HVAC 110</td>
<td>Applied Electricity I</td>
</tr>
<tr>
<td>HVAC 120</td>
<td>Heating I</td>
</tr>
<tr>
<td>HVAC 130</td>
<td>Air Conditioning I</td>
</tr>
<tr>
<td>HVAC 220</td>
<td>Heating II</td>
</tr>
<tr>
<td>HVAC 221</td>
<td>Introduction to Hydraulics</td>
</tr>
<tr>
<td>HVAC 240</td>
<td>Refrigeration</td>
</tr>
<tr>
<td>LAND 133</td>
<td>Residential Landscape Maintenance</td>
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<tr>
<td>MATH 114</td>
<td>Technical Math I</td>
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LIMITED CHOICE REQUIREMENTS

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

CHOICE 1: General Education Core Areas

<table>
<thead>
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<td>Speech Communication Core Area</td>
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</tr>
<tr>
<td>Science/Technology Core Area</td>
<td>3</td>
</tr>
<tr>
<td>Global Perspectives and Diversity Core Area</td>
<td>3</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL

65

NOTES
1. HVAC 110 can substitute as the prerequisite for ELTE 112.

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.

<table>
<thead>
<tr>
<th>I</th>
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<td>BLDR 101</td>
<td>BLDR 123</td>
<td>BLDR 132</td>
<td>BLDT 126</td>
</tr>
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<td>ELTE 100</td>
<td>ELTE 112</td>
<td>BLDT 121</td>
<td>HVAC 240</td>
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<td>HVAC 100</td>
<td>HVAC 120</td>
<td>HORT 105</td>
<td>LAND 133</td>
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<td>HVAC 105</td>
<td>HVAC 130</td>
<td>HVAC 220</td>
<td>Lim.Chr.</td>
</tr>
<tr>
<td>HVAC 110</td>
<td>Lim.Chr.</td>
<td>HVAC 221</td>
<td>Lim.Chr.</td>
</tr>
<tr>
<td>MATH 114</td>
<td>Lim.Chr.</td>
<td>Lim.Chr.</td>
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</table>

BUILDING MAINTENANCE
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 10237 (Effective Fall 1997–Summer 2002)

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 maintenance of residential and commercial buildings.

REQUIREMENTS

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<td>BLDR 132</td>
<td>General Home Maintenance</td>
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<td>ELTE 100</td>
<td>Electrical Safety Practices</td>
</tr>
<tr>
<td>ELTE 112</td>
<td>Basic Wiring Installation (See Note 1)</td>
</tr>
<tr>
<td>HVAC 100</td>
<td>Fundamentals of Heating, Ventilating and Air Conditioning</td>
</tr>
<tr>
<td>HVAC 105</td>
<td>Sheet Metal Fabrication and Installation</td>
</tr>
<tr>
<td>HVAC 110</td>
<td>Applied Electricity I</td>
</tr>
<tr>
<td>HVAC 120</td>
<td>Heating I</td>
</tr>
<tr>
<td>HVAC 130</td>
<td>Air Conditioning I</td>
</tr>
<tr>
<td>HVAC 220</td>
<td>Heating II</td>
</tr>
<tr>
<td>HVAC 221</td>
<td>Introduction to Hydraulics</td>
</tr>
<tr>
<td>LAND 133</td>
<td>Residential Landscape Maintenance</td>
</tr>
</tbody>
</table>

LIMITED CHOICE REQUIREMENTS

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

CHOICE 1: Maintenance Related

2 Credits

<table>
<thead>
<tr>
<th>CODE</th>
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<tbody>
<tr>
<td>BLDT 121</td>
<td>Residential Framing and Foundations</td>
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</tr>
<tr>
<td>BLDT 125</td>
<td>Interior Carpentry</td>
<td>4</td>
</tr>
<tr>
<td>HVAC 240</td>
<td>Refrigeration</td>
<td>4</td>
</tr>
<tr>
<td>MATH 114</td>
<td>Technical Math I</td>
<td>4</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL

36

NOTES
1. HVAC 110 can substitute as the prerequisite for ELTE 112.

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.

<table>
<thead>
<tr>
<th></th>
<th>II</th>
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<tbody>
<tr>
<td>BLDR 101</td>
<td>ELTE 112</td>
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<tr>
<td>BLDR 132</td>
<td>HVAC 120</td>
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<tr>
<td>ELTE 100</td>
<td>HVAC 130</td>
</tr>
<tr>
<td>HVAC 110</td>
<td>LAND 133</td>
</tr>
</tbody>
</table>
BUSINESS ADMINISTRATION
ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 10243 (Effective Fall 1997–Summer 2002)

This degree program provides basic instruction in key business areas, such as management, marketing, finance, 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 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 students may find it necessary to complete specific coursework 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

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<thead>
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<td>BUSN 118</td>
<td>Introduction to Business</td>
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<td>BUSN 201</td>
<td>International Business</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>CSIS 200</td>
<td>Information Systems Technology and Problem Solving</td>
<td>3</td>
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<tr>
<td>ECON 201</td>
<td>Principles of Economics - Micro</td>
<td>3</td>
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<td>LEGL 215</td>
<td>Business Law I, Basic Principles</td>
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<td>Math for Business</td>
<td>4</td>
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<td>MGMT 200</td>
<td>Creative Thinking for Business</td>
<td>3</td>
<td></td>
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<tr>
<td>MGMT 225</td>
<td>Principles of Management</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MGMT 234</td>
<td>Diversity in the Workplace - A Domestic &amp; Global Perspective</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MKTG 200</td>
<td>Principles of Marketing</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>SPCH 110</td>
<td>Oral Communication in the Workplace</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>WRIT 127</td>
<td>Business Communications</td>
<td>3</td>
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LIMITED CHOICE REQUIREMENTS

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

| CHOICE 1: General Education Core Areas | 0 Credits |
| (See Note 1) | |
| Writing Core Area | 0 |
| Speech Communication Core Area | 0 |
| Science/Technology Core Area | 0 |
| Global Perspectives and Diversity Core Area | 0 |

| CHOICE 2: Management Related | 5–6 Credits |
| (See Note 2) | |

| CHOICE 3: Marketing Related | 5–6 Credits |
| (See Note 3) | |

| CHOICE 4: Computer Related | 4–5 Credits |
| (See Note 4) | |

| CHOICE 5: Business Related | 6 Credits |
| ACCG 211 | Principles of Accounting II | 4 |
| ECON 202 | Principles of Economics - Macro | 3 |
| ECON 213 | Economic/Business History of the U.S. | 3 |
| ECON 221 | International Economics | 3 |
| LABR 200 | Introduction to Labor Relations | 3 |
| LABR 204 | Employment Law for Managers | 3 |
| LEGL 216 | Business Law II, Commercial Law | 3 |
| LEGL 217 | Business Law III, Business Organizations | 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.J.M.E. Series may be used (MGMT 240–MGMT 270). BUSN 295 may also be used.
3. Choose courses with a MKTG prefix that are not already used to meet degree requirements. BUSN 226 and/or BUSN 250 may also be used.
4. 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.

<table>
<thead>
<tr>
<th>I</th>
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<th>III</th>
<th>IV</th>
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<tr>
<td>BUSN 118</td>
<td>BUSN 201</td>
<td>ACCG 210</td>
<td>LEGL 215</td>
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<tr>
<td>MATH 117</td>
<td>CSIS 200</td>
<td>ECON 201</td>
<td>Lim.Ch.</td>
</tr>
<tr>
<td>SPCH 110</td>
<td>MGMT 234</td>
<td>MGMT 200</td>
<td>Lim.Ch.</td>
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<tr>
<td>WRIT 127</td>
<td>MKTG 200</td>
<td>MGMT 225</td>
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<td>Lim.Ch.</td>
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</table>
INTERNATIONAL BUSINESS
ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 10246 (Effective Fall 1997–Summer 2002)

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 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 students may find it necessary to complete specific coursework 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

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<td>ACGG 211</td>
<td>Principles of Accounting II</td>
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<td>BUSN 118</td>
<td>Introduction to Business</td>
<td>3</td>
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<tr>
<td>BUSN 201</td>
<td>International Business</td>
<td>3</td>
</tr>
<tr>
<td>CISB 100</td>
<td>Introduction to Computer Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>CISB 200</td>
<td>Information Systems Technology and Problem Solving</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 234</td>
<td>Diversity in the Workplace - A Domestic &amp; Global Perspective</td>
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</tr>
<tr>
<td>MKTG 119</td>
<td>Marketing and Managing Your Professional Image</td>
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<tr>
<td>MKTG 200</td>
<td>Principles of Marketing</td>
<td>3</td>
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<tr>
<td>SPCH 110</td>
<td>Oral Communication in the Workplace</td>
<td>3</td>
</tr>
<tr>
<td>WRIT 127</td>
<td>Business Communications</td>
<td>3</td>
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</tbody>
</table>

TOTAL: 31 CREDITS

LIMITED CHOICE REQUIREMENTS

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 | 6 |
| Speech Communication Core Area | 6 |
| Science/Technology Core Area | 6 |
| Global Perspectives and Diversity Core Area | 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 |

CHOOSE THREE: International/Business Related 15 Credits

| ACGG 211 | Principles of Accounting II | 4 |
| BUSN 205 | 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 216 | Business Law I, Basic Principles | 3 |
| MGMT 225 | Principles of Management | 3 |
| MGMT 231 | Team Development | 3 |
| MGMT 237 | Managing for Continual Improvement | 3 |
| MGMT 280 | Management Internship | 3 |
| POLS 270 | International Relations | 3 |

TOTAL: 31 CREDITS

MINIMUM TOTAL 60 CREDITS

NOTES
1. 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.

| BUSN 118 | BUSN 201 | ACGG 210 | MGMT 234 |
| CISB 100 | MKTG 119 | CISB 200 | Lim.Ch. 2 |
| SPCH 110 | MKTG 200 | Lim.Ch. 2 | Lim.Ch. |
| WRIT 127 | Lim.Ch. | Lim.Ch. | Lim.Ch. |
| Lim.Ch. | Lim.Ch. | Lim.Ch. | Lim.Ch. |

68 • LANSING COMMUNITY COLLEGE CATALOG 1997–98
CIVIL TECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 10178 (Effective Fall 1997–Summer 2002)

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, and 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 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 students may find it necessary to complete specific coursework 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 220, telephone number (517) 483-1396.

REQUIREMENTS

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<td>CHEM 135</td>
<td>Chemistry in Society</td>
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<tr>
<td>CIVL 101</td>
<td>Civil Drafting</td>
<td>4</td>
</tr>
<tr>
<td>CIVL 120</td>
<td>Surveying</td>
<td>4</td>
</tr>
<tr>
<td>CIVL 124</td>
<td>Route Survey</td>
<td>4</td>
</tr>
<tr>
<td>CIVL 131</td>
<td>Traffic Technology</td>
<td>3</td>
</tr>
<tr>
<td>CIVL 132</td>
<td>Construction Materials</td>
<td>5</td>
</tr>
<tr>
<td>CIVL 135</td>
<td>Soils Technology</td>
<td>3</td>
</tr>
<tr>
<td>CIVL 138</td>
<td>Hydrology and Highway Technology</td>
<td>5</td>
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<td>CIVL 200</td>
<td>Civil Mathematics</td>
<td>5</td>
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<tr>
<td>CIVL 241</td>
<td>Statics and Strength of Materials</td>
<td>5</td>
</tr>
<tr>
<td>GRET 203</td>
<td>MicroStation Beginning</td>
<td>3</td>
</tr>
<tr>
<td>SOCL 120</td>
<td>Introduction to Sociology</td>
<td>4</td>
</tr>
<tr>
<td>SPCH 120</td>
<td>Dynamics of Communication</td>
<td>3</td>
</tr>
</tbody>
</table>

TOTAL: 52 CREDITS

LIMITED CHOICE REQUIREMENTS

| TOTAL: 11–12 CREDITS |

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

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

Writing Core Area
Speech Communication Core Area (See Note 1)
Science/Technology Core Area (See Note 1)
Global Perspectives and Diversity Core Area (See Note 1)

3 Credits

CHOICE 2: Mathematics

MATH 115 | Technical Math II | 4
MATH 129 | College Algebra and Trigonometry | 5

4–5 Credits

CHOICE 3: Physical Science

PHYS 200 | Applied Physics | 4
PHYS 213 | Physics I: Mechanics | 5

4–6 Credits

MINIMUM TOTAL 63

NOTES:
1. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.
2. Students who are interested in practical field experience may apply for the Student Civil Technician Co-op Program. Contact the Technology Careers Department 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.

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<td>CHEM 135</td>
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<tr>
<td>SPCH 120</td>
<td>CIVL 124</td>
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<td>CIVL 200</td>
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### COMPUTER NETWORKING AND COMMUNICATIONS
**ASSOCIATE IN BUSINESS DEGREE**

Curriculum Code: 10751 (Effective Fall 1997–Summer 2002)

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 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 students may find it necessary to complete specific coursework 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

<table>
<thead>
<tr>
<th>CODE</th>
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<tbody>
<tr>
<td></td>
<td>CREDIT HOURS</td>
</tr>
<tr>
<td>CAB 195</td>
<td>Microsoft Windows</td>
</tr>
<tr>
<td>CIS 100</td>
<td>Introduction to Computer Information Systems</td>
</tr>
<tr>
<td>CIS 102</td>
<td>Introduction to the Internet in Business</td>
</tr>
<tr>
<td>CIS 119</td>
<td>Introduction to Windows Programming with Visual BASIC</td>
</tr>
<tr>
<td>CIS 130</td>
<td>Data Communications</td>
</tr>
<tr>
<td>CIS 151</td>
<td>Using Lotus Notes</td>
</tr>
<tr>
<td>CIS 152</td>
<td>Developing Lotus Notes Applications</td>
</tr>
<tr>
<td>CIS 200</td>
<td>Information Systems Technology and Problem Solving</td>
</tr>
<tr>
<td>CIS 202</td>
<td>Advanced Internet for Business and Education</td>
</tr>
<tr>
<td>CIS 230</td>
<td>Introduction to Local Area Networks</td>
</tr>
<tr>
<td>CIS 231</td>
<td>Advanced Local Area Networks</td>
</tr>
<tr>
<td>CIS 258</td>
<td>Developing Multimedia Home Pages for the WWW</td>
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### LIMITED CHOICE REQUIREMENTS

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<tr>
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<td>CIS 104</td>
<td>Introduction to DOS</td>
</tr>
<tr>
<td>CIS 107</td>
<td>DOS Management</td>
</tr>
<tr>
<td>CIS 122</td>
<td>Advanced Windows Programming with Visual BASIC</td>
</tr>
<tr>
<td>CIS 136</td>
<td>SQL Structured Query Language</td>
</tr>
<tr>
<td>CIS 141</td>
<td>PowerBuilder</td>
</tr>
<tr>
<td>CIS 143</td>
<td>Oracle Database for Business</td>
</tr>
<tr>
<td>CIS 180</td>
<td>C Programming with Business Applications</td>
</tr>
<tr>
<td>CIS 235</td>
<td>Microcomputer Hardware Support</td>
</tr>
<tr>
<td>CIS 236</td>
<td>Microcomputer Software Support</td>
</tr>
<tr>
<td>CIS 240</td>
<td>Operating Systems</td>
</tr>
<tr>
<td>CIS 247</td>
<td>Microcomputer Project</td>
</tr>
<tr>
<td>CIS 250</td>
<td>Database Concepts</td>
</tr>
<tr>
<td>CIS 260</td>
<td>Systems Analysis and Design</td>
</tr>
<tr>
<td>CIS 281</td>
<td>Visual C++ Programming</td>
</tr>
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</table>

### NOTES

1. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.
2. Other CABS or CISB-prefix courses may be approved for Choice 2 by a Computer Information Systems Academic Program advisor.

### 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.

<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>CAB 195</td>
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<td>CIS 130</td>
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<tr>
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<tr>
<td>Lim. Ch. 4</td>
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### MINIMUM TOTAL

70  •  LANSING COMMUNITY COLLEGE CATALOG 1997–98
COMPUTER SECURITY AND CONTROLS
ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 10253 (Effective Fall 1997–Summer 2002)

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 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 students may find it necessary to complete specific coursework 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

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
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<tbody>
<tr>
<td>ACCG 210</td>
<td>Principles of Accounting I</td>
<td>4</td>
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<tr>
<td>ACCG 211</td>
<td>Principles of Accounting II</td>
<td>4</td>
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<tr>
<td>ACCG 220</td>
<td>Intermediate Accounting I</td>
<td>4</td>
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<tr>
<td>ACCG 221</td>
<td>Intermediate Accounting II</td>
<td>4</td>
</tr>
<tr>
<td>ACCG 250</td>
<td>Auditing</td>
<td>3</td>
</tr>
<tr>
<td>CISB 100</td>
<td>Introduction to Computer Information</td>
<td>3</td>
</tr>
<tr>
<td>CISB 120</td>
<td>Introduction to Programming and Logic Using BASIC</td>
<td>4</td>
</tr>
<tr>
<td>CISB 130</td>
<td>Data Communications</td>
<td>3</td>
</tr>
<tr>
<td>CISB 170</td>
<td>COBOL I</td>
<td>4</td>
</tr>
<tr>
<td>CISB 200</td>
<td>Information Systems Technology and Problem Solving</td>
<td>3</td>
</tr>
<tr>
<td>CISB 201</td>
<td>Information Systems Auditing</td>
<td>3</td>
</tr>
<tr>
<td>CISB 240</td>
<td>Operating Systems</td>
<td>3</td>
</tr>
<tr>
<td>CISB 250</td>
<td>Database Concepts</td>
<td>3</td>
</tr>
<tr>
<td>CISB 260</td>
<td>Systems Analysis and Design</td>
<td>4</td>
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<tr>
<td>CISB 270</td>
<td>COBOL II</td>
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LIMITED CHOICE REQUIREMENTS

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

<table>
<thead>
<tr>
<th>CHOICE 1: General Education Core Areas</th>
<th>9 Credits</th>
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<tr>
<td>Writing Core Area</td>
<td>3</td>
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<tr>
<td>Speech Communication Core Area</td>
<td>3</td>
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<tr>
<td>Science/Technology Core Area (See Note 1)</td>
<td>0</td>
</tr>
<tr>
<td>Global Perspectives and Diversity Core Area</td>
<td>3</td>
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</table>

MINIMUM TOTAL 61

NOTES
1. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.
2. 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.

<table>
<thead>
<tr>
<th>I</th>
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<th>IV</th>
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<tbody>
<tr>
<td>ACCG 210</td>
<td>ACCG 211</td>
<td>ACCG 220</td>
<td>ACCG 221</td>
</tr>
<tr>
<td>CISB 100</td>
<td>CISB 130</td>
<td>CISB 201</td>
<td>CISB 200</td>
</tr>
<tr>
<td>CISB 120</td>
<td>CISB 170</td>
<td>CISB 240</td>
<td>CISB 250</td>
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<td>Lim.Ch.</td>
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<td>CISB 270</td>
<td>Lim.Ch.</td>
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<td></td>
<td></td>
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<td>ACCG 290</td>
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</table>

LANSING COMMUNITY COLLEGE CATALOG 1997–98 71
# ELECTRONICS TECHNOLOGY, COMPUTER TECHNICIAN ASSOCIATE IN APPLIED SCIENCE DEGREE

**Curriculum Code:** 10743 (Effective Fall 1997–Summer 2002)

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 Class Schedule for course prerequisite information. Basic skills assessment and advising information may be found on page 6 of this catalog.

## GENERAL EDUCATION
General education is an important part of this program and includes a mathematics competency requirement. To fulfill this mathematics competency requirement, some students may find it necessary to complete specific coursework in mathematics. For information on how to fulfill all general education requirements, see page 22.

## INFORMATION
Contact the Technology Careers Department, Gammon Vocational-Technical Center, Room 220, telephone number (517) 483-1336.

## REQUIREMENTS

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>TOTAL: 38 CREDITS</th>
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<tr>
<td>CABS 195: Microsoft Windows</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>CISB 107: DOS Management</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>CISB 120: Introduction to Programming and Logic Using BASIC</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>CISB 130: Data Communications</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>CISB 200: Information Systems Technology and Problem Solving</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>CISB 230: Introduction to Local Area Networks</td>
<td></td>
<td>3</td>
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<tr>
<td>CISB 231: Advanced Local Area Networks</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>CISB 258: Microcomputer Software Support</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>CISB 240: Operating Systems</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>ELCT 100: Schematic Drawing</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>ELCT 120: Programming Preparation</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>ELCT 151: Computer Troubleshooting I</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>ELCT 160: Logic Problems Analysis I</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>ELCT 161: Soldering/Dessoldering</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>ELCT 170: Computer Repair Electronics I</td>
<td></td>
<td>6</td>
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<td>ELCT 171: Computer Repair Electronics II</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>ELCT 180: Computer Test Equipment I</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>ELCT 181: Computer Test Equipment II</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>SPCH 110: Oral Communication in the Workplace</td>
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<tr>
<td>WRIT 124: Technical Writing</td>
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<td>3</td>
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</table>

## LIMITED CHOICE REQUIREMENTS

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

### CHOICE 1: General Education Core Areas

(See the GENERAL EDUCATION section above)

- Writing Core Area (See Note 1) 3 Credits
- Speech Communication Core Area (See Note 1) 0 Credits
- Science/Technology Core Area (See Note 1) 0 Credits
- Global Perspectives and Diversity Core Area 3 Credits

### CHOICE 2: Word Processing

- Word Perfect - Beginning for DOS 2 Credits
- Word Perfect for Windows 2 Credits

### CHOICE 2: Spreadsheet

- Lotus 123 for DOS 2 Credits
- Excel 2 Credits
- Quattro Pro 2 Credits
- Lotus 123 for Windows 2 Credits

### CHOICE 4: Database

- CABS 132: Paradox Database 2 Credits
- CABS 133: Microsoft Access Database 2 Credits
- CABS 135: FoxPro for Windows 2 Credits

**MINIMUM TOTAL:** 67 CREDITS

**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 Microcomputer 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 advisement.

| ELCT 100: Schematic Drawing     | 1 Credit
| ELCT 151: Computer Troubleshooting I | 3 Credits
| ELCT 160: Logic Problems Analysis I | 3 Credits
| ELCT 161: Soldering/Dessoldering | 3 Credits
| ELCT 170: Computer Repair Electronics I | 6 Credits
| ELCT 171: Computer Repair Electronics II | 6 Credits
| ELCT 180: Computer Test Equipment I | 3 Credits
| ELCT 181: Computer Test Equipment II | 2 Credits

**LIMITED CHOICE REQUIREMENTS**

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

### CHOICE 1: Software

- CABS 195: Microsoft Windows 2 Credits
- CISB 107: DOS Management 1 Credit
- CISB 130: Data Communications 3 Credits
- CISB 230: Introduction to Local Area Networks 3 Credits
- CISB 240: Operating Systems 3 Credits
- ELCT 120: Programming Preparation 2 Credits

### CHOICE 2: Communication

- SPCH 110: Oral Communication in the Workplace 3 Credits
- WRIT 117: Technical Writing 4 Credits
- WRIT 124: Technical Writing 3 Credits

**MINIMUM TOTAL:** 31 CREDITS

## COMPUTER REPAIR TECHNICIAN CERTIFICATE OF ACHIEVEMENT

**Curriculum Code:** 10168 (Effective Fall 1997–Summer 2002)

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.

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<td>ELCT 100: Schematic Drawing</td>
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</tr>
<tr>
<td>ELCT 151: Computer Troubleshooting I</td>
<td>3 Credits</td>
<td></td>
</tr>
<tr>
<td>ELCT 160: Logic Problems Analysis I</td>
<td>3 Credits</td>
<td></td>
</tr>
<tr>
<td>ELCT 161: Soldering/Dessoldering</td>
<td>3 Credits</td>
<td></td>
</tr>
<tr>
<td>ELCT 170: Computer Repair Electronics I</td>
<td>6 Credits</td>
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</tr>
<tr>
<td>ELCT 171: Computer Repair Electronics II</td>
<td>6 Credits</td>
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</tr>
<tr>
<td>ELCT 180: Computer Test Equipment I</td>
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</tr>
<tr>
<td>ELCT 181: Computer Test Equipment II</td>
<td>2 Credits</td>
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**LIMITED CHOICE REQUIREMENTS**

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

### CHOICE 1: Software

- CABS 195: Microsoft Windows 2 Credits
- CISB 107: DOS Management 1 Credit
- CISB 130: Data Communications 3 Credits
- CISB 230: Introduction to Local Area Networks 3 Credits
- CISB 240: Operating Systems 3 Credits
- ELCT 120: Programming Preparation 2 Credits

### CHOICE 2: Communication

- SPCH 110: Oral Communication in the Workplace 3 Credits
- WRIT 117: Technical Writing 4 Credits
- WRIT 124: Technical Writing 3 Credits

**MINIMUM TOTAL:** 31 CREDITS

## SUGGESTED COURSE SEQUENCE

- ELCT 100: Schematic Drawing
- ELCT 151: Computer Troubleshooting I
- ELCT 160: Logic Problems Analysis I
- ELCT 161: Soldering/Dessoldering
- ELCT 170: Computer Repair Electronics I
- ELCT 171: Computer Repair Electronics II
- ELCT 180: Computer Test Equipment I
- ELCT 181: Computer Test Equipment II
MICROCOMPUTER SUPPORT SPECIALIST
ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 10713 (Effective Fall 1997–Summer 2002)

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 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 students may find it necessary to complete specific coursework 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

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<td>Introduction to Computer Information Systems</td>
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</tr>
<tr>
<td>CISB 104</td>
<td>Introduction to DOS</td>
<td>1</td>
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<tr>
<td>CISB 107</td>
<td>DOS Management</td>
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</tr>
<tr>
<td>CISB 119</td>
<td>Introduction to Windows Programming With Visual BASIC</td>
<td>4</td>
</tr>
<tr>
<td>CISB 130</td>
<td>Data Communications</td>
<td>3</td>
</tr>
<tr>
<td>CISB 200</td>
<td>Information Systems Technology and Problem Solving</td>
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<tr>
<td>CISB 230</td>
<td>Introduction to Local Area Networks</td>
<td>3</td>
</tr>
<tr>
<td>CISB 235</td>
<td>Microcomputer Hardware Support</td>
<td>3</td>
</tr>
<tr>
<td>CISB 258</td>
<td>Microcomputer Software Support</td>
<td>3</td>
</tr>
<tr>
<td>CISB 240</td>
<td>Operating Systems</td>
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LIMITED CHOICE REQUIREMENTS

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

<table>
<thead>
<tr>
<th>CHOICE</th>
<th>TOTAL: 32-34 CREDITS</th>
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<tr>
<td>(See the GENERAL EDUCATION section above)</td>
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<td>Writing Core Area</td>
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<tr>
<td>Speech Communication Core Area</td>
<td>3</td>
</tr>
<tr>
<td>Science/Technology Core Area (See Note 1)</td>
<td>0</td>
</tr>
<tr>
<td>Global Perspectives and Diversity Core Area</td>
<td>3</td>
</tr>
<tr>
<td>CHOICE 2: Word Processing</td>
<td>4-6 Credits</td>
</tr>
<tr>
<td>CABS 114</td>
<td>WordPerfect - Beginning for DOS</td>
</tr>
<tr>
<td>CABS 115</td>
<td>WordPerfect - Advanced for DOS</td>
</tr>
<tr>
<td>CABS 119</td>
<td>Word for Windows</td>
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<tr>
<td>CABS 121</td>
<td>WordPerfect for Windows</td>
</tr>
<tr>
<td>CABS 180</td>
<td>Desktop Publishing Using PageMaker</td>
</tr>
<tr>
<td>CABS 219</td>
<td>Advanced Microsoft Word</td>
</tr>
<tr>
<td>CHOICE 3: Spreadsheets</td>
<td>4 Credits</td>
</tr>
<tr>
<td>CABS 123</td>
<td>Lotus 123 for DOS</td>
</tr>
<tr>
<td>CABS 124</td>
<td>Advanced Lotus Release 2 for DOS</td>
</tr>
<tr>
<td>CABS 126</td>
<td>Excel</td>
</tr>
<tr>
<td>CABS 127</td>
<td>Quattro Pro</td>
</tr>
<tr>
<td>CABS 128</td>
<td>Lotus 123 for Windows</td>
</tr>
<tr>
<td>CABS 129</td>
<td>Excel - Advanced</td>
</tr>
<tr>
<td>CABS 132</td>
<td>Paradox Database</td>
</tr>
<tr>
<td>CABS 133</td>
<td>Microsoft Access Database</td>
</tr>
<tr>
<td>CABS 135</td>
<td>FoxPro for Windows</td>
</tr>
<tr>
<td>CABS 233</td>
<td>Advanced Microsof Access</td>
</tr>
<tr>
<td>CABS 140</td>
<td>Business Graphics Using Harward Graphics</td>
</tr>
<tr>
<td>CABS 182</td>
<td>Microsoft PowerPoint/Windows</td>
</tr>
<tr>
<td>CABS 110</td>
<td>Microsoft Office</td>
</tr>
<tr>
<td>CABS 117</td>
<td>Microcomputer Ferms Design</td>
</tr>
<tr>
<td>CISB 140</td>
<td>Client/Servers Computing</td>
</tr>
<tr>
<td>CISB 231</td>
<td>Advanced Local Area Networks</td>
</tr>
<tr>
<td>CISB 247</td>
<td>Microcomputer Project</td>
</tr>
<tr>
<td>CISB 256</td>
<td>Multimedia in Business</td>
</tr>
<tr>
<td>CISB 260</td>
<td>Systems Analysis and Design</td>
</tr>
<tr>
<td>WRIT 195</td>
<td>Writing User Documentation</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL: 61

NOTES
1. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.
2. For graduation, a student must have earned a minimum 2.0 grade point average in courses 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.
MICROCOMPUTER SYSTEMS
ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 1011 (Effective Fall 1997–Summer 2002)

Microcomputer systems programmers develop programs to be run on today's powerful microcomputer systems and networks. Study and experience follows either an object-oriented or procedural programming track. Skills in the areas of computer programming, communication, systems analysis and design, business systems applications, microcomputer support, and systems control are required to succeed in jobs related to computer systems in business.

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 students may find it necessary to complete specific coursework 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) 463-1522.

REQUIREMENTS

<table>
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<td>CABS</td>
<td>Micros Windows</td>
<td>2</td>
</tr>
<tr>
<td>CISP</td>
<td>Introduction to Computer Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>CISP</td>
<td>Introduction to DOS</td>
<td>1</td>
</tr>
<tr>
<td>CISP</td>
<td>Data Communications</td>
<td>3</td>
</tr>
<tr>
<td>CISP</td>
<td>Information Systems Technology and Problem Solving</td>
<td>3</td>
</tr>
<tr>
<td>CISP</td>
<td>Introduction to Local Area Networks</td>
<td>3</td>
</tr>
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<td>CISP</td>
<td>Operating Systems</td>
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</tr>
<tr>
<td>CISP</td>
<td>Database Concepts</td>
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<td>CISP</td>
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LIMITED CHOICE REQUIREMENTS

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<td>CISP</td>
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<td>3</td>
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<tr>
<td>CISP</td>
<td>Introduction to DOS</td>
<td>1</td>
</tr>
<tr>
<td>CISP</td>
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<td>3</td>
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<tr>
<td>CISP</td>
<td>Information Systems Technology and Problem Solving</td>
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<td>CISP</td>
<td>Introduction to Local Area Networks</td>
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<td>CISP</td>
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<td>Database Concepts</td>
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</tr>
<tr>
<td>CISP</td>
<td>Systems Analysis and Design</td>
<td>4</td>
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Complete the indicated number of credits from EACH CHOICE listed below.

CHOICE 1: General Education Core Areas

(See the GENERAL EDUCATION section above)

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
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<tbody>
<tr>
<td>CISP</td>
<td>Writing Core Area</td>
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<td>CISP</td>
<td>Speech Communication Core Area</td>
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</tr>
<tr>
<td>CISP</td>
<td>Science/Technology Core Area (See Note 1)</td>
<td>3</td>
</tr>
<tr>
<td>CISP</td>
<td>Global Perspectives and Diversity Core Area</td>
<td>3</td>
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</table>

CHOICE 2: Programming Track (Choose 1 Subchoice)

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CISP</td>
<td>Introduction to Programming and Logic Using BASIC</td>
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<tr>
<td>CISP</td>
<td>Programming with Basic Application</td>
<td>3</td>
</tr>
<tr>
<td>CISP</td>
<td>C++ Language with OOP</td>
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</table>

CHOICE 3: Computer Specialty Area

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
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</thead>
<tbody>
<tr>
<td>CISP</td>
<td>Microsoft Access Database</td>
<td>2</td>
</tr>
<tr>
<td>CISP</td>
<td>FoxPro Database - for Windows</td>
<td>3</td>
</tr>
<tr>
<td>CISP</td>
<td>Introduction to the Internet in Business</td>
<td>2</td>
</tr>
<tr>
<td>CISP</td>
<td>DOS Management</td>
<td>1</td>
</tr>
<tr>
<td>CISP</td>
<td>Advanced Internet for Business and Education</td>
<td>2</td>
</tr>
<tr>
<td>CISP</td>
<td>Advanced Local Area Networks</td>
<td>3</td>
</tr>
<tr>
<td>CISP</td>
<td>Microcomputer Hardware Support</td>
<td>3</td>
</tr>
<tr>
<td>CISP</td>
<td>Microcomputer Software Support</td>
<td>3</td>
</tr>
<tr>
<td>CISP</td>
<td>Developing Multimode Home Pages for the WWW</td>
<td>2</td>
</tr>
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</table>

CHOICE 4: Computer Related

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
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</thead>
<tbody>
<tr>
<td>CISP</td>
<td>Programming Internship</td>
<td>3</td>
</tr>
<tr>
<td>CISP</td>
<td>Microcomputer Project</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>MINIMUM TOTAL</td>
<td>60</td>
</tr>
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</table>

NOTES

1. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.

2. For graduation, a student must have earned a minimum 2.0 grade point average in courses with a CISP 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.

<table>
<thead>
<tr>
<th>CODE</th>
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<tr>
<td>CABS</td>
<td>Microsoft Office</td>
<td>3</td>
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<td>CABS</td>
<td>Micros Windows</td>
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<tr>
<td>CISP</td>
<td>Introduction to Computer Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>CISP</td>
<td>Introduction to DOS</td>
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<td>CISP</td>
<td>Information Systems Technology and Problem Solving</td>
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<td>CISP</td>
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<tr>
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<td>Systems Analysis and Design</td>
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</tbody>
</table>

MICROCOMPUTER SYSTEMS
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 10107 (Effective Fall 1997–Summer 2002)

Certificate holders may qualify for entry level/hands-on positions in this or a related area. Additional training will enhance an individual's employment and advancement opportunities.

REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
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<tr>
<td>CABS</td>
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<tr>
<td>CABS</td>
<td>Micros Windows</td>
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<tr>
<td>CISP</td>
<td>Introduction to Computer Information Systems</td>
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</tr>
<tr>
<td>CISP</td>
<td>Introduction to DOS</td>
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</tr>
<tr>
<td>CISP</td>
<td>Data Communications</td>
<td>3</td>
</tr>
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</table>

LIMITED CHOICE REQUIREMENTS

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

CHOICE 1: Programming Introduction

<table>
<thead>
<tr>
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<th>TITLE</th>
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<tbody>
<tr>
<td>CISP</td>
<td>Introduction to Programming and Logic Using BASIC</td>
<td>4</td>
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<tr>
<td>CISP</td>
<td>Programming with Basic Application</td>
<td>3</td>
</tr>
<tr>
<td>CISP</td>
<td>C++ Language with OOP</td>
<td>4</td>
</tr>
</tbody>
</table>

CHOICE 2: Computer Related

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CISP</td>
<td>Microcomputer Hardware Support</td>
<td>3</td>
</tr>
<tr>
<td>CISP</td>
<td>Microcomputer Software Support</td>
<td>3</td>
</tr>
<tr>
<td>CISP</td>
<td>Developing Multimode Home Pages for the WWW</td>
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CHOICE 3: Writing

<table>
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<td>WRT</td>
<td>Composition I</td>
<td>4</td>
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<td>WRT</td>
<td>Technical Writing</td>
<td>3</td>
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<tr>
<td>WRT</td>
<td>Business Communications</td>
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CHOICE 4: Speech Communication

<table>
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<th>CODE</th>
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<tr>
<td>SPCH</td>
<td>Oral Communication in the Workplace</td>
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<td>SPCH</td>
<td>Dynamics of Communication</td>
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</table>

MINIMUM TOTAL

30

NOTES

1. For graduation, a student must have earned a minimum 2.0 grade point average in courses with a CISP 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.

<table>
<thead>
<tr>
<th>CODE</th>
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<tr>
<td>CISP</td>
<td>Principles of Accounting I</td>
<td>4</td>
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<tr>
<td>CABS</td>
<td>Microsoft Office</td>
<td>3</td>
</tr>
<tr>
<td>CABS</td>
<td>Micros Windows</td>
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</tr>
<tr>
<td>CISP</td>
<td>Introduction to Computer Information Systems</td>
<td>3</td>
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<tr>
<td>CISP</td>
<td>Introduction to DOS</td>
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</tr>
<tr>
<td>CISP</td>
<td>Data Communications</td>
<td>3</td>
</tr>
<tr>
<td>CISP</td>
<td>Information Systems Technology and Problem Solving</td>
<td>3</td>
</tr>
<tr>
<td>CISP</td>
<td>Introduction to Local Area Networks</td>
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<td>CISP</td>
<td>Operating Systems</td>
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</tr>
<tr>
<td>CISP</td>
<td>Database Concepts</td>
<td>3</td>
</tr>
<tr>
<td>CISP</td>
<td>Systems Analysis and Design</td>
<td>4</td>
</tr>
</tbody>
</table>
PROGRAMMER/ANALYST
ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 10113 (Effective Fall 1997–Summer 2002)

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 to 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 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 students may find it necessary to complete specific coursework 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) 485-1522.

REQUIREMENTS

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<td>Introduction to Programming and Logic Using BASIC</td>
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<td>CISB 136</td>
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<td>CISB 170</td>
<td>COBOL I</td>
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<td>CISB 200</td>
<td>Information Systems Technology and Problem Solving</td>
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<td>CISB 240</td>
<td>Operating Systems</td>
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<td>CISB 250</td>
<td>Database Concepts</td>
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<td>CISB 260</td>
<td>Systems Analysis and Design</td>
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<td>CISB 261</td>
<td>Systems Implementation with CASE Tools</td>
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<td>CISB 270</td>
<td>COBOL II</td>
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LIMITED CHOICE REQUIREMENTS

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 1) | 6        |
| Global Perspectives and Diversity Core Area | 3        |

| CHOICE 2: Additional Language (Choose 1 Subchoice) | 7 Credits |
| Subchoice 2A                                  |           |
| CISB 175 | Beginning RPG on the AS/400                | 2        |
| CISB 275 | Advanced RPG on the AS/400                 | 4        |
| Subchoice 2B                                  |           |
| CISB 180 | C Programming with Business Application    | 3        |
| CISB 260 | C++ Language with OOP                      | 4        |

| CHOICE 3: Computer Related (See Note 2) | 7 Credits |
| CABS 110 | Microsoft Office                           | 3        |
| CABS 195 | Microsoft Windows                          | 2        |
| CISB 102 | Introduction to the Internet in Business   | 2        |
| CISB 136 | SQL: Structured Query Language             | 2        |
| CISB 250 | Introduction to Local Area Networks        | 3        |
| CISB 245 | Programming Internship                     | 3        |

MINIMUM TOTAL

60

NOTES

1. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.
2. Students may also select from unchosen courses in Choice 2 or any course with a CISB prefix not already used to meet degree requirements.
3. For graduation from this program, a student must have earned a minimum 2.0 grade point average in courses with a 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.
ADVANCED MICROCOMPUTER APPLICATIONS SPECIALIST
CERTIFICATE OF COMPLETION

Curriculum Code: 10766 (Effective Fall 1997–Summer 2002)

This certificate of completion is designed for students who either hold a post-secondary degree (associate or bachelor) in a Computer Information Systems-related area or have 3 or more years work experience in a Computer Information Systems-related job. To receive this certificate of completion applicants must attach proof of a degree or work experience to the application for the certificate.

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 6 of this catalog.

INFORMATION
Contact the Continuing Professional Education Department at (517) 483-1579 for an information packet or this certificate program.

REQUIREMENTS

<table>
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<tr>
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<td>CABS 195</td>
<td>Microsoft Windows</td>
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<tr>
<td>CABS 119</td>
<td>Word for Windows</td>
<td>2</td>
</tr>
<tr>
<td>CABS 126</td>
<td>Excel</td>
<td>2</td>
</tr>
<tr>
<td>CABS 129</td>
<td>Excel-Advanced</td>
<td>2</td>
</tr>
<tr>
<td>CABS 133</td>
<td>Microsoft Access Database</td>
<td>2</td>
</tr>
<tr>
<td>CABS 182</td>
<td>Microsoft PowerPoint/Windows</td>
<td>2</td>
</tr>
<tr>
<td>CABS 219</td>
<td>Advanced Microsoft Word</td>
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</tr>
<tr>
<td>CABS 233</td>
<td>Advanced Microsoft Access</td>
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**TOTAL: 16 CREDITS**

**MINIMUM TOTAL:** 16

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.

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<thead>
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<td>CABS 182</td>
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<tr>
<td>CABS 126</td>
<td>CABS 219</td>
</tr>
<tr>
<td>CABS 133</td>
<td>CABS 233</td>
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</tbody>
</table>

MICROCOMPUTER USER SUPPORT SPECIALIST
CERTIFICATE OF COMPLETION

Curriculum Code: 10766 (Effective Fall 1997–Summer 2002)

This certificate of completion is designed for students who either hold a post-secondary degree (associate or bachelor) in a Computer Information Systems-related area or have three or more years work experience in a Computer Information Systems-related job. To receive this certificate of completion applicants must attach proof of a degree or work experience to the application for the certificate.

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 6 of this catalog.

INFORMATION
Contact the Continuing Professional Education Department at (517) 483-1579 for an information packet or this certificate program.

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<td>CABS 195</td>
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</tr>
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<td>CISP 107</td>
<td>DOS Management</td>
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</tr>
<tr>
<td>CISP 260</td>
<td>Information Systems Technology and Problem Solving</td>
<td>3</td>
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<tr>
<td>CISP 230</td>
<td>Introduction to Local Area Networks</td>
<td>3</td>
</tr>
<tr>
<td>CISP 231</td>
<td>Advanced Local Area Networks</td>
<td>3</td>
</tr>
<tr>
<td>CISP 235</td>
<td>Microcomputer Hardware Support</td>
<td>3</td>
</tr>
<tr>
<td>CISP 236</td>
<td>Microcomputer Software Support</td>
<td>3</td>
</tr>
</tbody>
</table>

**TOTAL: 18 CREDITS**

**MINIMUM TOTAL:** 18

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.

<table>
<thead>
<tr>
<th>CABS 195</th>
<th>CISP 200</th>
</tr>
</thead>
<tbody>
<tr>
<td>CISP 107</td>
<td>CISP 231</td>
</tr>
<tr>
<td>CISP 230</td>
<td>CISP 236</td>
</tr>
<tr>
<td>CISP 235</td>
<td></td>
</tr>
</tbody>
</table>
### SYSTEM SUPPORT SPECIALIST FOR THE AS/400
#### CERTIFICATE OF COMPLETION

Curriculum Code: 10754 (Effective Fall 1997–Spring 1999)

This certificate of completion is designed for students who either hold a post-secondary degree (associate or bachelor) in a Computer Information Systems-related area or have three or more years work experience in a Computer Information Systems-related job. To receive this certificate of completion applicants must attach proof of a degree or work experience to the application for this certificate.

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

#### INFORMATION
Contact the Continuing Professional Education Department at (517) 483-1578 for an information packet on this certificate program.

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CISB 175</td>
<td>Beginning RPG on the AS/400</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>CISB 177</td>
<td>AS/400 Operations</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>CISB 271</td>
<td>COBOL/400: Implementing the COBOL Language on the AS/400</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>CISB 275</td>
<td>Advanced RPG on the AS/400</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>CISB 282</td>
<td>C/400: Implementing the C Language on the AS/400</td>
<td>3</td>
</tr>
</tbody>
</table>

**MINIMUM TOTAL**: 16 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.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CISB 175</td>
<td>CISB 177</td>
</tr>
<tr>
<td>CISB 177</td>
<td>CISB 271</td>
</tr>
<tr>
<td>CISB 271</td>
<td>CISB 275</td>
</tr>
</tbody>
</table>

### WINDOWS PROGRAMMING SPECIALIST
#### CERTIFICATE OF COMPLETION

Curriculum Code: 10763 (Effective Fall 1997–Summer 2002)

This certificate of completion is designed for students who either hold a post-secondary degree (associate or bachelor) in a Computer Information Systems-related area or have three or more years work experience in a Computer Information Systems-related job. To receive this certificate of completion applicants must attach proof of a degree or work experience to the application for the certificate.

#### 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 Continuing Professional Education Department at (517) 483-1578 for an information packet on this certificate program.

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CABS 195</td>
<td>Microsoft Windows</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>CISB 107</td>
<td>DOS Management</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>CISB 119</td>
<td>Introduction to Windows Programming With Visual BASIC</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>CISB 122</td>
<td>Advanced Windows Programming With Visual BASIC</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>CISB 281</td>
<td>Visual C++ Programming</td>
<td>3</td>
</tr>
</tbody>
</table>

**LIMITED CHOICE REQUIREMENTS**

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

**CHOICE 1**: Multimedia

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CISB 256</td>
<td>Multimedia in Business</td>
<td>3</td>
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<tr>
<td></td>
<td>CISB 257</td>
<td>Multimedia Presentations</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>CISB 258</td>
<td>Developing Multimedia Home Pages for the WWW</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>CISB 259</td>
<td>Introduction to Developing Multimedia Training</td>
<td>2</td>
</tr>
</tbody>
</table>

**MINIMUM TOTAL**: 2–3 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.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CABS 195</td>
<td>CISB 122</td>
</tr>
<tr>
<td>CISB 107</td>
<td>CISB 281</td>
</tr>
<tr>
<td>CISB 119</td>
<td>Lim. Ch.</td>
</tr>
</tbody>
</table>
RESIDENTIAL BUILDING
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 10167 (Effective Fall 1997–Summer 2002)

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 journey status.

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 6 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 students may find it necessary to complete specific coursework 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 229, telephone number (517) 483-1356.

REQUIREMENTS

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
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<tbody>
<tr>
<td>CODE</td>
<td>TITLE</td>
</tr>
<tr>
<td>ARCH 271</td>
<td>Structural Theory</td>
</tr>
<tr>
<td>ARCH 278</td>
<td>Energy Efficient Design</td>
</tr>
<tr>
<td>ARCH 283</td>
<td>Materials of Construction</td>
</tr>
<tr>
<td>BLDT 100</td>
<td>Introduction to Construction</td>
</tr>
<tr>
<td>BLDT 103</td>
<td>Structural Blueprint Reading</td>
</tr>
<tr>
<td>BLDT 121</td>
<td>Residential Framing and Foundations</td>
</tr>
<tr>
<td>BLDT 124</td>
<td>Remodeling, Shingling and Siding</td>
</tr>
<tr>
<td>BLDT 125</td>
<td>Interior Carpentry</td>
</tr>
<tr>
<td>BLDT 262</td>
<td>Builders Business License</td>
</tr>
<tr>
<td>BLDT 277</td>
<td>Construction Cost Estimating</td>
</tr>
<tr>
<td>BLDT 281</td>
<td>BOCA/Uniform Code</td>
</tr>
<tr>
<td>MATH 112</td>
<td>Intermediate Algebra</td>
</tr>
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</table>

LIMITED CHOICE REQUIREMENTS

<table>
<thead>
<tr>
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<tr>
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<tr>
<td>ARCH 283</td>
<td>Materials of Construction</td>
</tr>
<tr>
<td>BLDT 100</td>
<td>Introduction to Construction</td>
</tr>
<tr>
<td>BLDT 103</td>
<td>Structural Blueprint Reading</td>
</tr>
<tr>
<td>BLDT 121</td>
<td>Residential Framing and Foundations</td>
</tr>
<tr>
<td>BLDT 125</td>
<td>Interior Carpentry</td>
</tr>
<tr>
<td>BLDT 277</td>
<td>Construction Cost Estimating</td>
</tr>
<tr>
<td>BLDT 281</td>
<td>BOCA/Uniform Code</td>
</tr>
<tr>
<td>MATH 350</td>
<td>Mathematics-Principles and Practices</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL 30 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.

<table>
<thead>
<tr>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>BLDT 100</td>
<td>ARCH 278</td>
<td>ARCH 283</td>
<td>ARCH 271</td>
</tr>
<tr>
<td>BLDT 103</td>
<td>BLDT 124</td>
<td>BLDT 126</td>
<td>BLDT 292</td>
</tr>
<tr>
<td>BLDT 121</td>
<td>MATH 112</td>
<td>BLDT 277</td>
<td>BLDT 281</td>
</tr>
<tr>
<td>Lim.Ch.</td>
<td>Lim.Ch.</td>
<td>Lim.Ch.</td>
<td>Lim.Ch.</td>
</tr>
</tbody>
</table>

RESIDENTIAL BUILDING
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 10135 (Effective Fall 1997–Summer 2002)

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

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>TOTAL: 30 CREDITS</th>
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</thead>
<tbody>
<tr>
<td>CODE</td>
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</tr>
<tr>
<td>ARCH 283</td>
<td>Materials of Construction</td>
</tr>
<tr>
<td>BLDT 100</td>
<td>Introduction to Construction</td>
</tr>
<tr>
<td>BLDT 103</td>
<td>Structural Blueprint Reading</td>
</tr>
<tr>
<td>BLDT 121</td>
<td>Residential Framing and Foundations</td>
</tr>
<tr>
<td>BLDT 125</td>
<td>Interior Carpentry</td>
</tr>
<tr>
<td>BLDT 277</td>
<td>Construction Cost Estimating</td>
</tr>
<tr>
<td>BLDT 281</td>
<td>BOCA/Uniform Code</td>
</tr>
<tr>
<td>MATH 350</td>
<td>Mathematics-Principles and Practices</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL 30 CREDITS

SUGGESTED COURSE SEQUENCE

<table>
<thead>
<tr>
<th>I</th>
<th>II</th>
<th>III</th>
</tr>
</thead>
<tbody>
<tr>
<td>BLDT 100</td>
<td>ARCH 283</td>
<td></td>
</tr>
<tr>
<td>BLDT 121</td>
<td>BLDT 103</td>
<td></td>
</tr>
<tr>
<td>BLDT 125</td>
<td>BLDT 277</td>
<td></td>
</tr>
<tr>
<td>MATH 050</td>
<td>BLDT 281</td>
<td></td>
</tr>
</tbody>
</table>

78  LANSING COMMUNITY COLLEGE CATALOG 1997–98
COURT AND CONFERENCE REPORTING
ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 10273 (Effective Fall 1997–Summer 2002)

Reporters are communication specialists who use a steno machine to make a verbatim record of legal proceedings and produce an accurate transcript of what was said. They can also be realtime reporters and/or captioners, providing instant translation for deaf or hard-of-hearing persons. Court reporters work in all environments where a verbatim record is needed or voice-to-text translation is required for communication access. Official reporters work in the courtroom. Freelance reporters work in a freelance firm or home office. Realtime reporters work in a classroom or conference setting. Captioners work at a television station. State certification is required and national certification is highly recommended. 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 Court and Conference Reporting Program.

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 students may find it necessary to complete specific coursework 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 1997/98 academic year. For the most current and complete information, interested students should contact the Admissions Office, Room 232, Gannon Vocational-Technical Center, telephone (517) 483-1254.

REQUIREMENTS FOR ADMISSION TO THE COURT AND CONFERENCE REPORTING PROGRAM
For current information about admission requirements, students must contact the Admissions Office, Gannon Vocational-Technical Center, Room 232, telephone number (517) 483-1254.

REQUIREMENTS

<table>
<thead>
<tr>
<th>COURSE</th>
<th>TITLE</th>
<th>TOTAL: 49 CREDITS</th>
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</thead>
<tbody>
<tr>
<td>CACR 120</td>
<td>Introduction to Speedbuilding</td>
<td>6</td>
</tr>
<tr>
<td>CACR 213</td>
<td>Court Reporting II</td>
<td>11</td>
</tr>
<tr>
<td>CACR 215</td>
<td>Intermediate Speedbuilding</td>
<td>6</td>
</tr>
<tr>
<td>CACR 216</td>
<td>Realtime Reporting</td>
<td>1</td>
</tr>
</tbody>
</table>

LIMITED CHOICE REQUIREMENTS

<table>
<thead>
<tr>
<th>TOTAL: 15–23 CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CACR 120</td>
</tr>
<tr>
<td>CACR 215</td>
</tr>
</tbody>
</table>

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

CHOICE 1: General Education Core Areas

<table>
<thead>
<tr>
<th>(See the GENERAL EDUCATION section above)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Writing Core Area</td>
</tr>
<tr>
<td>Speech Communication Core Area</td>
</tr>
<tr>
<td>Science/Technology Core Area</td>
</tr>
<tr>
<td>Global Perspectives and Diversity Core Area</td>
</tr>
</tbody>
</table>

CHOICE 2: Professional Related Courses

<table>
<thead>
<tr>
<th>Coursenumber</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CACR 120</td>
<td>Introduction to Speedbuilding</td>
<td>6</td>
</tr>
<tr>
<td>CACR 215</td>
<td>Intermediate Speedbuilding</td>
<td>6</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL

64

NOTES
1. CACR 250 requires 128–159 verified hours of actual working fieldwork.
2. CACR 225 and 226 are required courses for students not achieving the top speed level requirements in CACR 215.
3. Students must begin Court and Conference Reporting courses in the fall or summer. A deposit of $75.00 for a steno machine and $25.00 for a stand is required for students admitted into the program. Students are responsible for obtaining their own equipment upon completion of the program.
4. CACR 260 is a Certified Shorthand Reporter (CSR) exam prep course. It is offered to admit eight weeks prior to the CSR exam. It is not a required course for the program.
5. A final grade of 3.0 or higher is required to advance to the next related CACR course.
6. Students must attain the following minimum speeds for graduation: 230 wpm Testimony; 200 wpm Jury Charge; 180 wpm Literary; and 80 net wpm typing.
7. This curriculum meets all of the National Court Reporters Association on Approved Student Education (BASE) minimum standards for receiving a degree in Court and Conference Reporting.

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.

<table>
<thead>
<tr>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>CACR 120</td>
<td>CACR 215</td>
<td>CACR 216</td>
<td>CACR 217</td>
</tr>
<tr>
<td>Lin.Ch.1</td>
<td>Lin.Ch.1</td>
<td>CACR 120</td>
<td>CACR 215</td>
</tr>
<tr>
<td>Lin.Ch.1</td>
<td>Lin.Ch.1</td>
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<td>CACR 217</td>
</tr>
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<td>Lin.Ch.1</td>
<td>Lin.Ch.1</td>
<td>CACR 217</td>
<td>CACR 218</td>
</tr>
</tbody>
</table>

COURT AND CONFERENCE REPORTING CATALOG 1997-98
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 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 this mathematics competency requirement, some students may find it necessary to complete specific coursework 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.

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>TOTAL: 39 CREDITS</th>
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</thead>
<tbody>
<tr>
<td>CODE</td>
<td>TITLE</td>
</tr>
<tr>
<td>ACCG 210</td>
<td>Principles of Accounting I</td>
</tr>
<tr>
<td>BUSN 118</td>
<td>Introduction to Business</td>
</tr>
<tr>
<td>CISB 205</td>
<td>Information Systems Technology and Problem Solving</td>
</tr>
<tr>
<td>CUA1 102</td>
<td>Credit Union Accounting</td>
</tr>
<tr>
<td>CUMA 100</td>
<td>Introduction to Credit Union Operations</td>
</tr>
<tr>
<td>CUMA 200</td>
<td>Credit and Collections</td>
</tr>
<tr>
<td>CUMA 201</td>
<td>Credit Union Financial Counseling</td>
</tr>
<tr>
<td>CUMA 215</td>
<td>Business Law for Credit Unions</td>
</tr>
<tr>
<td>MGMT 226</td>
<td>Principles of Management</td>
</tr>
<tr>
<td>MGMT 224</td>
<td>Diversity in the Workplace - A Domestic and Global Perspective</td>
</tr>
<tr>
<td>MKTG 200</td>
<td>Principles of Marketing</td>
</tr>
<tr>
<td>SPCH 110</td>
<td>Oral Communication in the Workplace</td>
</tr>
<tr>
<td>WRIT 127</td>
<td>Business Communications</td>
</tr>
</tbody>
</table>

LIMITED CHOICE REQUIREMENTS

TOTAL: 22–23 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 GENERAL EDUCATION section above)

CHOICE 2: Management Related 18 Credits

| CODE | TITLE | CREDIT HOURS |
| ACCG 211 | Principles of Accounting II | 4 |
| BUSN 200 | International Business | 3 |
| BUSN 205 | Personal Finance | 2 |
| ECON 201 | Principles of Economics - Micro | 3 |
| ECON 202 | Principles of Economics - Macro | 3 |
| INSU 265 | Principles of Risk and Insurance | 3 |
| LABR 200 | Introduction to Labor Relations | 3 |
| LABR 204 | Employment Law for Managers | 3 |
| MATH 117 | Math for Business | 4 |
| MGMT 224 | Human Resource Management | 3 |
| MGMT 226 | Organizational Behavior | 3 |
| MGMT 237 | Managing for Continual Improvement | 3 |
| MGMT 239 | Time and Stress Management | 3 |
| MGMT 304 | Organizational Development | 3 |
| MGMT 357 | Human Resource Management Skills | 3 |
| MKTG 110 | Marketing and Managing Your Professional Image | 2 |
| REAL 275 | Real Estate Financing | 3 |

CHOICE 3: Computer Related (See Note 2) 4–5 Credits

MINIMUM TOTAL 61

NOTES

1. Students completing REQUIREMENTS have fulfilled the requirements for these Core areas.
2. Choose CABS-prefix courses of 110 or above and/or CISB-prefix courses of 103 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.

<table>
<thead>
<tr>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUSN 118</td>
<td>CUA1 102</td>
<td>ACCG 210</td>
<td>CISB 200</td>
</tr>
<tr>
<td>CUMA 100</td>
<td>CUMA 200</td>
<td>CUMA 201</td>
<td>MGMT 225</td>
</tr>
<tr>
<td>SPCH 110</td>
<td>MKTG 200</td>
<td>CUMA 215</td>
<td>MGMT 224</td>
</tr>
<tr>
<td>WRIT 127</td>
<td>Lim.Ch.</td>
<td>Lim.Ch.</td>
<td>Lim.Ch.</td>
</tr>
<tr>
<td>Lim.Ch.</td>
<td>Lim.Ch.</td>
<td>Lim.Ch.</td>
<td>Lim.Ch.</td>
</tr>
</tbody>
</table>

CREDIT UNION MANAGEMENT

CERTIFICATE OF COMPLETION

Curriculum Code: 10151 (Effective Fall 1997–Summer 2002)

Certificate holders may improve their opportunities for advancement in this or a related area. Additional education enhances an individual's employment opportunities.

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>TOTAL: 17 CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CODE</td>
<td>TITLE</td>
</tr>
<tr>
<td>CUA1 102</td>
<td>Credit Union Accounting</td>
</tr>
<tr>
<td>CUMA 100</td>
<td>Introduction to Credit Union Operations</td>
</tr>
<tr>
<td>CUMA 200</td>
<td>Credit and Collections</td>
</tr>
<tr>
<td>CUMA 201</td>
<td>Credit Union Financial Counseling</td>
</tr>
<tr>
<td>CUMA 215</td>
<td>Business Law for Credit Unions</td>
</tr>
<tr>
<td>MGMT 226</td>
<td>Principles of Management</td>
</tr>
</tbody>
</table>

LIMITED CHOICE REQUIREMENTS

TOTAL: 3 CREDITS

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

CHOICE 1: Communication Credits

| CODE | TITLE | CREDIT HOURS |
| MKTG 200 | Principles of Marketing | 3 |
| SPCH 110 | Oral Communication in the Workplace | 3 |
| WRIT 127 | Business Communications | 3 |

MINIMUM TOTAL 20

SUGGESTED COURSE SEQUENCE

Lansing Community College Catalog 1997–98

80
CRIMINAL JUSTICE, CORRECTIONS
ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 1076 (Effective Fall 1997-Summer 2002)

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 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 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 students may find it necessary to complete specific coursework 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 224, telephone number (517) 483-1570.

REQUIREMENTS

<table>
<thead>
<tr>
<th>COURSE</th>
<th>TITLE</th>
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<tbody>
<tr>
<td>CABS 102</td>
<td>Microcomputers for Non-Majors</td>
</tr>
<tr>
<td>CJUS 101</td>
<td>Introduction to Criminal Justice</td>
</tr>
<tr>
<td>CJUS 133</td>
<td>Juveniles in Corrections</td>
</tr>
<tr>
<td>CJUS 134</td>
<td>Probation and Parole</td>
</tr>
<tr>
<td>CJUS 245</td>
<td>Report Writing in Criminal Justice</td>
</tr>
<tr>
<td>EJGL 160</td>
<td>Critical Thinking in Law</td>
</tr>
<tr>
<td>PSYC 200</td>
<td>Introduction to Psychology</td>
</tr>
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<td>SOCL 120</td>
<td>Introduction to Sociology</td>
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<tr>
<td>SPCH 120</td>
<td>Dynamics of Communication</td>
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<tr>
<td>WRIT 121</td>
<td>Composition I</td>
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Vocational Certificate Requirements (See Note 1)

<table>
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<tr>
<th>COURSE</th>
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<tbody>
<tr>
<td>CJUS 131</td>
<td>Introduction to Corrections</td>
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<tr>
<td>CJUS 135</td>
<td>Legal Issues in Corrections</td>
</tr>
<tr>
<td>CJUS 250</td>
<td>Correctional Institutions</td>
</tr>
<tr>
<td>CJUS 251</td>
<td>Correctional Clients</td>
</tr>
<tr>
<td>CJUS 255</td>
<td>Human Relations in Criminal Justice</td>
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</table>

LIMITED CHOICE REQUIREMENTS

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

<table>
<thead>
<tr>
<th>CHOICE</th>
<th>GENERAL EDUCATION Core Areas</th>
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<tbody>
<tr>
<td></td>
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<tr>
<td></td>
<td>Writing Core Area (See Note 2)</td>
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<td></td>
<td>Speech Communication Core Area (See Note 2)</td>
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<td></td>
<td>Science/Technology Core Area</td>
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<td>Global Perspectives and Diversity Core Area (See Note 2)</td>
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<table>
<thead>
<tr>
<th>CHOICE</th>
<th>RELATED PROFESSIONAL COURSES</th>
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<tr>
<td></td>
<td>CJUS 102 Crime Causes and Conditions</td>
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<td>CJUS 106 Juvenile Problems: Control and Prevention I</td>
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<tr>
<td></td>
<td>CJUS 205 Policing into the 21st Century</td>
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<tr>
<td></td>
<td>SOCL 255 Contemporary Social Problems</td>
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<td></td>
<td>SOCL 260 Minority Groups</td>
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<td></td>
<td>SOCL 261 America in the Civil Rights Years</td>
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County and Local Detention Vocational Certificate (See Note 3)

<table>
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<tr>
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<tbody>
<tr>
<td>CJUS 133</td>
<td>Local Detention</td>
</tr>
<tr>
<td>CJUS 242</td>
<td>Unarmed Defense</td>
</tr>
<tr>
<td>CJUS 245</td>
<td>Jail Safety and I.D.</td>
</tr>
<tr>
<td>CJUS 255</td>
<td>Interpersonal Communication in Jails</td>
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<tr>
<td>WRIT 117</td>
<td>Writing Prep II (See Note 4)</td>
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</table>

MINIMUM TOTAL: 46 CREDITS

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 Career area.
3. Students completing courses listed below and CJUS 135, 245, 251 and 255 with a minimum 2.0 grade in each class will receive the County and Local Detention Vocational Certificate.
4. This course will be waived if student scores six or above on writing assessment test.
5. All Vocational Certificate courses are certified by the Michigan Corrections Officer Training Council.

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 advisement.

<table>
<thead>
<tr>
<th>I</th>
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<tr>
<td>CJUS 101</td>
<td>CJUS 131</td>
<td>CABS 122</td>
<td>CJUS 255</td>
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<td>LEGL 160</td>
<td>CJUS 245</td>
<td>CJUS 133</td>
<td>PSYC 200</td>
</tr>
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<td>SOCL 120</td>
<td>CJUS 250</td>
<td>CJUS 134</td>
<td>Lim. Ch.2</td>
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<td>WRIT 121</td>
<td>CJUS 251</td>
<td>CJUS 135</td>
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<td>SPCH 120</td>
<td>Lim. Ch.1</td>
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Lim. Ch.2

LANSING COMMUNITY COLLEGE CATALOG 1997-98 ▼ 81
CRIMINAL JUSTICE, LAW ENFORCEMENT ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 12257 (Effective Fall 1997-Summer 2002)

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 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 students may find it necessary to complete specific coursework 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 224, telephone number (517) 483-1570.

REQUIREMENTS

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<tr>
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<td>SOC 120</td>
</tr>
<tr>
<td>SPCH 120</td>
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LIMITED CHOICE REQUIREMENTS

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<tr>
<td>CJUS 258</td>
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<tr>
<td>PFFT 101</td>
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<tr>
<td>CJUS 106</td>
</tr>
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<td>CJUS 201</td>
</tr>
<tr>
<td>CJUS 205</td>
</tr>
<tr>
<td>WRT 121</td>
</tr>
<tr>
<td>Lim,Ch.1</td>
</tr>
</tbody>
</table>

Subchoice 2B: Other Law Enforcement

| CODE  | TITLE | CREDIT HOURS |
| CJUS 101  | Local Detention | 3 |
| CJUS 204  | Criminal Investigation | 4 |
| PSYC 200  | Introduction to Psychology | 4 |
| PSYC 250  | Abnormal Psychology | 3 |
| SOCL 255  | Contemporary Social Problems   | 3 |

MINIMUM TOTAL

81

NOTES

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.

Subchoice 2A: Mid-Michigan Police Academy

| CODE  | TITLE | CREDIT HOURS |
| CJUS 101  | CJUS 106  | CJUS 103  | Police Academy |
| CJUS 102  | CJUS 201  | CJUS 133  |  |
| LEGL 100  | CJUS 205  | CJUS 203  |  |
| WRT 121   | CJUS 255  | SOC 120   |  |
| Lim,Ch.1  | SPCH 120  |  |  |

Subchoice 2B: Other Law Enforcement

| CODE  | TITLE | CREDIT HOURS |
| CJUS 101  | CJUS 106  | CJUS 103  | CJUS 130 |
| CJUS 102  | CJUS 201  | CJUS 133  | PSYC 200 |
| LEGL 100  | CJUS 205  | CJUS 203  |  |
| WRT 121   | CJUS 255  | SOC 120   |  |
| Lim,Ch.1  | SPCH 120  |  |  |

Subchoice 2C: Other Law Enforcement

| CODE  | TITLE | CREDIT HOURS |
| CJUS 204  | CJUS 250  | SOC 255 |
|  |  |  |  |
CRIMINAL JUSTICE

MID-MICHIGAN POLICE ACADEMY
CERTIFICATE OF COMPLETION

Curriculum Code: 10737 (Effective Fall 1997-Summer 1998)

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 500 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 Class Schedule for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

INFORMATION
Contact the Police Academy Coordinator, William Martin, in the Police Academy Office, Old Central Building, Room 1200, telephone number (517) 483-5246.

REQUIREMENTS FOR ADMISSION TO THE MID-MICHIGAN POLICE ACADEMY PROGRAM
Curriculum Code: 10736

In order to be considered as a candidate for this program, students must complete the following requirements:

a. A minimum of 37 semester total credits (LCC Core Curriculum requirements must be satisfied by applicants without an Associate Degree or higher);

b. Have a minimum GPA of 2.0;

c. Meet minimum standards of employment for the State of Michigan as defined in Public Act 203;

d. Successfully complete the MLETC pre-employment test battery of reading/writing and physical skills examinations;

e. Not have an active accumulation of more than six points on his/her driving record;

f. Mid-Michigan Police Academy must receive two official transcripts of college(s) attended;

g. Must take (LCC) Computerized Placement Test;

h. An Associate Degree or higher or accumulated 37 semester credits with an overall GPA of 2.0 or above to make an application. In addition, all candidates must meet the minimum employment standards set by the State of Michigan.

MID-MICHIGAN POLICE ACADEMY PROGRAM REQUIREMENTS
Curriculum Code: 10737

<table>
<thead>
<tr>
<th>REQUIREMENTS CODE</th>
<th>TOTAL: 25 CREDITS</th>
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<tr>
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<td>TITLE</td>
</tr>
<tr>
<td>CJUS 260</td>
<td>Criminal Investigation and Procedures</td>
</tr>
<tr>
<td>CJUS 261</td>
<td>Michigan Criminal Law and Procedure</td>
</tr>
<tr>
<td>CJUS 282</td>
<td>Patrol Procedures and Tactics</td>
</tr>
<tr>
<td>CJUS 263</td>
<td>Standard First Aid</td>
</tr>
<tr>
<td>CJUS 264</td>
<td>Report Writing in Law Enforcement</td>
</tr>
<tr>
<td>CJUS 265</td>
<td>Highway Traffic Operations</td>
</tr>
<tr>
<td>CJUS 266</td>
<td>Basic Police Science</td>
</tr>
<tr>
<td>CJUS 267</td>
<td>Law Enforcement Physical Training</td>
</tr>
<tr>
<td>CJUS 288</td>
<td>Precision Driving</td>
</tr>
<tr>
<td>PFFT 114</td>
<td>Advanced Circuit Training</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL

25 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.
CAD/CAM ENGINEERING TECHNICIAN  
ASSOCIATE IN APPLIED SCIENCE DEGREE  

Curriculum Code: 10128 (Effective Fall 1997–Summer 2002)  

This curriculum is intended for those students planning to pursue an advanced degree in the engineering field. While striving for that goal, students often seek employment as computer-aided design (CAD) operators. A CAD operator is an integral part of all decisions made in developing a finished product. Responsibilities include graphically representing, either manually or electronically, the information received from an engineering design work team. CAD operators are employed by engineering and consulting firms, the automotive industry, manufacturers of special machinery, etc. 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 6 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 students may find it necessary to complete specific coursework 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 220, telephone number (517) 485-1336.

REQUIREMENTS  
TOTAL: 46 CREDITS  

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<tr>
<th>CODE</th>
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<td>CHEM 151</td>
<td>General Chemistry Lecture I</td>
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<td>CHEM 161</td>
<td>General Chemistry Laboratory I</td>
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<td>CPSC 150</td>
<td>FORTRAN</td>
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<tr>
<td>DTDS 101</td>
<td>Drafting</td>
<td>4</td>
</tr>
<tr>
<td>DTDS 102</td>
<td>Drafting II</td>
<td>4</td>
</tr>
<tr>
<td>DTDS 103</td>
<td>Geometric Tolerancing</td>
<td>2</td>
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<td>DTDS 104</td>
<td>Descriptive Geometry</td>
<td>4</td>
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<tr>
<td>MATH 151</td>
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<td>MATH 152</td>
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<td>MATH 253</td>
<td>Calculus III</td>
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<td>PHYS 215</td>
<td>Physics I; Mechanics</td>
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<tr>
<td>PHYS 216</td>
<td>Physics II: Electromagnetism, Waves, and Optics</td>
<td>4</td>
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<tr>
<td>PHYS 225</td>
<td>Physics I Laboratory</td>
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</tr>
<tr>
<td>PHYS 226</td>
<td>Physics II Laboratory</td>
<td>1</td>
</tr>
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</table>

LIMITED CHOICE REQUIREMENTS  
TOTAL: 21 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  

CHOICE 2: Computer Graphics (See Note 2)  

12 Credits  
Subchoice 2A  
DTDS 131 | AutoCAD Basic 2-D             | 4            |
DTDS 132 | AutoCAD Advanced 3-D         | 4            |
DTDS 233 | AutoCAD Solids               | 4            |
Subchoice 2B  
DTDS 180 | Unicorgraphics I             | 4            |
DTDS 181 | Unicorgraphics II            | 4            |
DTDS 182 | Unicorgraphics III           | 4            |

MINIMUM TOTAL 67

NOTES  
1. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.
2. The Computer Graphics series (12 credits) may be replaced by another approved computer graphics software package available through the Drafting and Design Program. See a Drafting and Design 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.

<table>
<thead>
<tr>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
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<tbody>
<tr>
<td>CHEM 151</td>
<td>DTDS 102</td>
<td>CPSC 150</td>
<td>DTDS 103</td>
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<tr>
<td>CHEM 161</td>
<td>MATH 152</td>
<td>MATH 253</td>
<td>DTDS 104</td>
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<td>DTDS 101</td>
<td>PHYS 215</td>
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<td>MATH 151</td>
<td>PHYS 225</td>
<td>PHYS 226</td>
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</table>
DRAFTING AND DESIGN
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 10165 (Effective Fall 1997–Summer 2002)

The program prepares individuals to apply technical knowledge and skills to plan and oversee 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 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 students may find it necessary to complete specific coursework 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 220, telephone number (517) 483-1336.

REQUIREMENTS

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<tr>
<td>CACP 101</td>
<td>PC Applications for Technology</td>
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<td>CACP 105</td>
<td>Basic Machining Processes</td>
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<td>DTDS 101</td>
<td>Drafting I</td>
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<td>Die Design and Construction</td>
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<td>DTDS 204</td>
<td>Jigs and Fixture Design</td>
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<td>MACH 100</td>
<td>Manufacturing Processes</td>
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<td>MACH 135</td>
<td>Metallurgy and Heat Treat</td>
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<td>MATH 114</td>
<td>Technical Math I</td>
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LIMITED CHOICE REQUIREMENTS

| TOTAL: 24 CREDITS |

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

CHOICE 1: General Education Core Areas (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

CHOICE 2: Computer Graphics (See Note 1)

<table>
<thead>
<tr>
<th>SUBCHOICE</th>
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<tr>
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<td>AutoCAD Basic 2-D</td>
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<tr>
<td>DTDS 132</td>
<td>AutoCAD Advanced 3-D</td>
</tr>
<tr>
<td>DTDS 233</td>
<td>AutoCAD Solids</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL

64

NOTES
1. The Computer Graphics series (12 credits) may be replaced by another approved computer graphics software package available through the Drafting and Design Program. See a Drafting and Design advisor for more information.

SUGGESTED COURSE SEQUENCE

<table>
<thead>
<tr>
<th>COURSE</th>
<th>TOTAL</th>
<th>CREDS</th>
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<tr>
<td>CACP 101</td>
<td>DTDS 102</td>
<td>Lim.Ch.</td>
</tr>
<tr>
<td>DTDS 101</td>
<td>DTDS 104</td>
<td>Lim.Ch.</td>
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<tr>
<td>MACH 100</td>
<td>DTDS 104</td>
<td>Lim.Ch.</td>
</tr>
<tr>
<td>MATH 114</td>
<td>Lim.Ch.</td>
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</table>

DRAFTING AND DESIGN
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 10145 (Effective Fall 1997–Summer 2002)

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 design (CAD) positions.

REQUIREMENTS

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<tr>
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<tr>
<td>CACP 101</td>
<td>PC Applications for Technology</td>
</tr>
<tr>
<td>DTDS 101</td>
<td>Drafting I</td>
</tr>
<tr>
<td>DTDS 102</td>
<td>Drafting II</td>
</tr>
<tr>
<td>DTDS 103</td>
<td>Geometric Tolerancing</td>
</tr>
<tr>
<td>DTDS 104</td>
<td>Descriptive Geometry</td>
</tr>
<tr>
<td>MACH 100</td>
<td>Manufacturing Processes</td>
</tr>
<tr>
<td>MACH 135</td>
<td>Technical Math I</td>
</tr>
</tbody>
</table>

LIMITED CHOICE REQUIREMENTS

| TOTAL: 12 CREDITS |

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

CHOICE 1: Computer Graphics (See Note 1)

<table>
<thead>
<tr>
<th>SUBCHOICE</th>
<th>TOTAL: 4 CREDITS</th>
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<tbody>
<tr>
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<tr>
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<td>AutoCAD Basic 2-D</td>
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<tr>
<td>DTDS 132</td>
<td>AutoCAD Advanced 3-D</td>
</tr>
<tr>
<td>DTDS 233</td>
<td>AutoCAD Solids</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL

37

NOTES
1. The Computer Graphics series (12 credits) may be replaced by another approved computer graphics software package available through the Drafting and Design Program. See a Drafting and Design advisor for more information.

SUGGESTED COURSE SEQUENCE

<table>
<thead>
<tr>
<th>COURSE</th>
<th>TOTAL</th>
<th>CREDS</th>
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<tbody>
<tr>
<td>CACP 101</td>
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</tr>
<tr>
<td>DTDS 101</td>
<td>DTDS 103</td>
<td>Lim.Ch.</td>
</tr>
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<td>MACH 100</td>
<td>DTDS 104</td>
<td>Lim.Ch.</td>
</tr>
<tr>
<td>MATH 114</td>
<td>Lim.Ch.</td>
<td></td>
</tr>
</tbody>
</table>
ELECTRICAL TECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 10134 (Effective Fall 1997–Summer 2002)

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 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 students may find it necessary to complete specific coursework 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 220, telephone number (517) 483-1336.

REQUIREMENTS

<table>
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<td>Electrical Safety Practices</td>
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<td>ELTE 110</td>
<td>Practical Electricity</td>
<td>3</td>
</tr>
<tr>
<td>ELTE 112</td>
<td>Basic Wiring Installation</td>
<td>2</td>
</tr>
<tr>
<td>ELTE 121</td>
<td>Analyzing Electric Circuits</td>
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<tr>
<td>ELTE 123</td>
<td>Motors and Transformers</td>
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<tr>
<td>ELTE 131</td>
<td>Introduction to Machine Control</td>
<td>4</td>
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<tr>
<td>ELTE 145</td>
<td>Electrical Prints for Buildings</td>
<td>4</td>
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<tr>
<td>ELTE 150</td>
<td>Electric Motor Maintenance</td>
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<tr>
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<td>INAU 100</td>
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LIMITED CHOICE REQUIREMENTS

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<tr>
<td></td>
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<td>12 Credits</td>
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</table>

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

CHOICE 1: General Education Core Areas
(See the GENERAL EDUCATION section above)
- Writing Core Area: 3 credits
- Speech Communication Core Area: 3 credits
- Science/Technology Core Area: 3 credits
- Global Perspectives and Diversity Core Area: 3 credits

CHOICE 2: Electrical Specialization (Choose 1 Subchoice)

Subchoice 2A: Construction Specialization
- BLDT 103: Structural Blueprint Reading: 4 credits
- BLDT 277: Construction Cost Estimating: 4 credits
- ELTE 141: National Electrical Code I: 4 credits
- ELTE 142: National Electrical Code II: 4 credits
- ELTE 240: Electrical Estimating: 3 credits
- HVAC 100: Fundamentals of Heating, Ventilating and Air Conditioning: 3 credits

Subchoice 2B: Machine Control and Maintenance Specialization
- ELTE 122: Industrial Control Electronics: 5 credits
- ELTE 232: Industrial Control Design: 3 credits
- ELTE 261: Allen-Bradley PLC-5 Advanced: 6 credits
- INAU 100: Applied Automation: 4 credits
- MFGM 101: Industrial Hydraulics: 4 credits

MINIMUM TOTAL: 67

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

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<tr>
<td>ELTE 100</td>
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<td>BLDT 103</td>
<td>BLDT 277</td>
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<td>ELTE 131</td>
<td>ELTE 141</td>
<td>HVAC 100</td>
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Control and Maintenance Specialty

<table>
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<tbody>
<tr>
<td>ELTE 100</td>
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<td>INAU 100</td>
<td>ELTE 145</td>
<td>MFGM 101</td>
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Lim.Ch.:
ELECTRICAL TECHNOLOGY, CONSTRUCTION
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 10759 (Effective Fall 1997–Summer 2002)

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 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 220, telephone number (517) 483-1336.

<table>
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<td>ELTE 123</td>
<td>Motors and Transformers</td>
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<td>Introduction to Machine Control</td>
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<td>National Electrical Code I</td>
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<td>ELTE 240</td>
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<td>ELTE 260</td>
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MINIMUM TOTAL 42

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 as 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.

<table>
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<td>INAU 100</td>
<td>ELTE 145</td>
<td>ELTE 260</td>
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ELECTRICAL TECHNOLOGY, CONTROL AND MAINTENANCE
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 10760 (Effective Fall 1997–Summer 2002)

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 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 220, telephone number (517) 483-1336.

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<tr>
<td>ELTE 112</td>
<td>Basic Wiring Installation</td>
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<td>ELTE 121</td>
<td>Analyzing Electric Circuits</td>
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<td>ELTE 122</td>
<td>Industrial Control Electronics</td>
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<td>ELTE 123</td>
<td>Motors and Transformers</td>
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<td>ELTE 131</td>
<td>Introduction to Machine Control</td>
</tr>
<tr>
<td>ELTE 150</td>
<td>Electric Motor Maintenance</td>
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<td>ELTE 260</td>
<td>Introduction to Programmable Logic Controllers</td>
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<tr>
<td>ELTE 281</td>
<td>Allen Bradley PLC-5 Advanced</td>
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<td>INAU 100</td>
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MINIMUM TOTAL 40

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 as 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.

<table>
<thead>
<tr>
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<th>I</th>
<th>II</th>
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<tbody>
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<td>ELTE 100</td>
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<td>ELTE 123</td>
<td>ELTE 122</td>
<td>ELTE 260</td>
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<td>INAU 100</td>
<td>ELTE 145</td>
<td>ELTE 150</td>
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</tbody>
</table>
ELECTRONICS TECHNOLOGY, BIOMEDICAL OPTION
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 1013 (Effective Fall 1997–Summer 2002)

Biomedical electronics technicians inspect, maintain, repair, calibrate, and modify electronic electrical, mechanical, hydraulic, and pneumatic equipment and instruments used in medical therapy, diagnosis, and research. They may also be involved in the operation and/or supervision of biomedical equipment and in equipment control. Second-year students complete an internship in a biomedical electronics repair facility under the supervision of a biomedical electronics technician. Biomedical electronics technicians are employed by hospitals, biomedical equipment manufacturers, and independent biomedical service facilities. 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 students may find it necessary to complete specific coursework 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 220, telephone number (517) 483-1336.

REQUIREMENTS

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<tr>
<td>CISB 200</td>
<td>Information Systems Technology and Problem Solving</td>
<td>3</td>
</tr>
<tr>
<td>ELCT 100</td>
<td>Schematic Drawing</td>
<td>1</td>
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<tr>
<td>ELCT 101</td>
<td>Analog Problems</td>
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</tr>
<tr>
<td>ELCT 109</td>
<td>DC Circuits</td>
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<tr>
<td>ELCT 110</td>
<td>AC Circuits</td>
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<tr>
<td>ELCT 112</td>
<td>Transistors</td>
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<tr>
<td>ELCT 120</td>
<td>Programming Preparation</td>
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</tr>
<tr>
<td>ELCT 130</td>
<td>Machine Language Programming</td>
<td>2</td>
</tr>
<tr>
<td>ELCT 131</td>
<td>Digital Basics</td>
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</tr>
<tr>
<td>ELCT 161</td>
<td>Soldering/Desoldering</td>
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<td>ELCT 211</td>
<td>Linear Circuits I</td>
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<td>ELCT 212</td>
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</tr>
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<td>ELCT 231</td>
<td>Advanced Digital Electronics</td>
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</tr>
<tr>
<td>ELCT 241</td>
<td>Analog Troubleshooting</td>
<td>1</td>
</tr>
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<td>ELCT 251</td>
<td>Digital Troubleshooting</td>
<td>1</td>
</tr>
<tr>
<td>ELCT 261</td>
<td>Consumer Product Systems</td>
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<td>ELCT 281</td>
<td>Biomedical Instrumentation</td>
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<td>ELCT 290</td>
<td>Biomedical Internship</td>
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<td>SPCH 110</td>
<td>Oral Communication in the Workplace</td>
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</tr>
<tr>
<td>WRIT 124</td>
<td>Technical Writing</td>
<td>3</td>
</tr>
</tbody>
</table>

LIMITED CHOICE REQUIREMENTS

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

Choice 1: General Education Core Areas

(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

MINIMUM TOTAL 65

NOTES

1. Students completing REQUIREMENTS have fulfilled the requirements for this course area.

SUGGESTED COURSE SEQUENCE

Students should read 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.
ELECTRONICS TECHNOLOGY, COMMUNICATIONS OPTION
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 10155 (Effective Fall 1997–Summer 2002)

Communications (or telecommunications) technicians install, repair and maintain radio, television, telephone and computer equipment. Most technicians work at repair facilities, on customers' premises, or in the field installing or repairing transmitters, receivers, antennas, and computer communications devices. Digital and analog circuits are combined with communications topics. Subjects include AM, FM, receivers, transmitters, antennas, transmission lines, microwave devices, and data communications. Communications technicians are employed at radio and television stations, two-way radio and cellular telephone service facilities, police, fire, and governmental agencies, as well as educational institutions. 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 students may find it necessary to complete specific coursework in mathematics. For information on how to fulfill all general education requirements, see page 29.

INFORMATION
Contact the Technology Careers Department, Gannon Vocational-Technical Center, Room 220, telephone number (517) 483-1336.

REQUIREMENTS

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<th>CODE</th>
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<td>1</td>
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<tr>
<td>ELCT 101</td>
<td>Analog Problems</td>
<td>4</td>
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<tr>
<td>ELCT 109</td>
<td>DC Circuits</td>
<td>3</td>
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<tr>
<td>ELCT 110</td>
<td>AC Circuits</td>
<td>3</td>
</tr>
<tr>
<td>ELCT 112</td>
<td>Transistors</td>
<td>6</td>
</tr>
<tr>
<td>ELCT 120</td>
<td>Programming Preparation</td>
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<tr>
<td>ELCT 130</td>
<td>Machine Language Programming</td>
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<td>ELCT 131</td>
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</tr>
<tr>
<td>ELCT 161</td>
<td>Soldering/Desoldering</td>
<td>1</td>
</tr>
<tr>
<td>ELCT 211</td>
<td>Linear Circuits I</td>
<td>4</td>
</tr>
<tr>
<td>ELCT 212</td>
<td>Linear Circuits II</td>
<td>4</td>
</tr>
<tr>
<td>ELCT 231</td>
<td>Advanced Digital Electronics</td>
<td>5</td>
</tr>
<tr>
<td>ELCT 241</td>
<td>Analog Troubleshooting</td>
<td>1</td>
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<tr>
<td>ELCT 251</td>
<td>Digital Troubleshooting</td>
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<td>ELCT 271</td>
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<td>ELCT 272</td>
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<td>Oral Communication in the Workplace</td>
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<td>WRIT 124</td>
<td>Technical Writing</td>
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TOTAL: 62 CREDITS

LIMITED CHOICE REQUIREMENTS

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<td>Information Systems Technology and Problem Solving</td>
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<tr>
<td>CISP 130</td>
<td>Data Communications</td>
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<td>ELCT 212</td>
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<tr>
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<td>Technical Writing</td>
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TOTAL: 3 CREDITS

LIMITED CHOICE REQUIREMENTS

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

CHOICE 1: General Education Core Areas 3 Credits

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<tr>
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<tr>
<td>WRIT 124</td>
<td>Technical Writing</td>
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MINIMUM TOTAL 65

NOTES
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.

<table>
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Electronics Technology, Digital Option
Associate in Applied Science Degree

Curriculum Code: 10127 (Effective Fall 1997-Summer 2002)

Digital electronics technicians install, operate, maintain and service computer systems. They also diagnose problems caused by mechanical or electrical malfunctions in individual computer units and in complex systems such as local area networks (LANS) and industrial controllers. They deal with the analysis and component level troubleshooting of digital logic and microcomputer circuits and systems, as well as microprocessor based computer, computer peripherals, and control systems. Digital electronics technicians are employed with automotive manufacturers, industrial automation companies, business machine services companies, telephone companies, instrumentation sales, robotics repair companies, maintenance companies, etc. 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 prerequisites 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 students may find it necessary to complete specific coursework 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 220, telephone number (517) 463-1339.

REQUIREMENTS

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LIMITED CHOICE REQUIREMENTS

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LIMITED CHOICE REQUIREMENTS

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

MINIMUM TOTAL 67

NOTES
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.

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ENVIRONMENTAL RESOURCE MANAGEMENT TECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE

Curriculum Code: 10793 (Effective Fall 1997-Summer 2002)

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 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 this mathematics competency requirement, some students may find it necessary to complete specific coursework 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

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<td>CHEM 192</td>
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<td>CPSC 120</td>
<td>Introduction to Computers</td>
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<td>ENVR 121</td>
<td>Environmental Rules and Regulations</td>
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<td>ENVR 122</td>
<td>Environmental Sampling and Instrumentation</td>
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<td>Industrial Processes and Pollution Prevention</td>
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<td>GEOL 230</td>
<td>Environmental Geology</td>
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<td>GRET 203</td>
<td>Micro Station Beginning</td>
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<td>MATH 121</td>
<td>College Algebra I</td>
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<td>Composition I</td>
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<td></td>
<td>Hazardous Waste Operator and Emergency Response Training (Hazwoper) (See Note 1)</td>
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LIMITED CHOICE REQUIREMENTS

Total: 15–21 Credits

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

CHOICE 1: General Education Core Areas (See Note 2) 6 Credits
(See the GENERAL EDUCATION section above)
Writing Core Area
Speech Communication Core Area
Science/Technology Core Area
Global Perspectives and Diversity Core Area

CHOICE 2: Humanities
HUMS 213 World Civilizations I
PHIL 211 World Philosophies I
SOCI 120 Introduction to Sociology

CHOICE 3: Environmentally Related Courses' 11-17 Credits
CIVL 135 Soils Technology
FIRE 120 Chemistry of Hazardous Materials
FIRE 220 Hazardous Materials in the Fire Service
GRE 220 Hydrological Systems
METR 220 Introduction to Meteorology

MINIMUM TOTAL 65

NOTES
1. Hazardous Waste Operator and Emergency Response Training (HMNT 201) to be taken through the proposed Hazardous Materials Mitigation Technology program or in the Michigan State Police Hazmat Training Center.
2. Students completing REQUIREMENTS have fulfilled the requirements for those Core areas.

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.

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LANSING COMMUNITY COLLEGE CATALOG 1997-98 91
GEOGRAPHIC RESOURCE AND ENVIRONMENTAL TECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 10224 (Effective Fall 1997–Summer 2002)

GRET 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 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 students may find it necessary to complete specific coursework in mathematics. For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Technology Careers Department, Garron Vocational Technical Center, Room 220, telephone number (517) 483-1296.

REQUIREMENTS

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<td>MicroStation Graphic Environment</td>
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<tr>
<td>GRET 205</td>
<td>Principles of Geographic Information Systems</td>
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<tr>
<td>GRET 208</td>
<td>Advanced Techniques in GIS</td>
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<td>GRET 209</td>
<td>Applications in Geographic Information Systems</td>
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<td>Advanced MicroStation</td>
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<td>GRET 220</td>
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<td>GRET 221</td>
<td>Landforms and Soil Systems in GIS</td>
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<td>GRET 223</td>
<td>Environmental Resource Management</td>
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<td>Air Photo Interpretation</td>
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<td>ORACLE for Geographic Information Systems</td>
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<td>GRET 245</td>
<td>GIS Analysis Systems</td>
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<td>LAND 155</td>
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LIMITED CHOICE REQUIREMENTS

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<td>CHOICE 1:</td>
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(See the GENERAL EDUCATION section above)

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<tr>
<td>Global Perspectives and Diversity Core Area</td>
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</table>

MINIMUM TOTAL

55

NOTES

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.

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<td>WRIT 126</td>
<td>WRIT 127</td>
<td>WRIT 128</td>
</tr>
</tbody>
</table>


92 LANSING COMMUNITY COLLEGE CATALOG 1997–98
FIRE SCIENCE ACADEMY
CERTIFICATE OF COMPLETION

Curriculum Code: 1079 (Effective Fall 1997-Summer 1998)

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, HAZ MAT Awareness, and HAZ MAT 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 Class 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 1997/98 academic year. For the most recent and complete information, interested students should contact the Admissions Office, Gannon Vocational-Technical Center, Room 232, 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 232, telephone number (517) 483-1254.

REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
<th>COURSE</th>
<th>TOTAL CREDIT CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIRE 101</td>
<td>Michigan F.F.T.C. Basic Fire Training Level IA and IB</td>
<td>9</td>
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<tr>
<td>FIRE 102</td>
<td>Michigan F.F.T.C. Basic Fire Training Level IIA and IIB</td>
<td>4</td>
</tr>
<tr>
<td>PFHW 109</td>
<td>Emergency Services Fitness I</td>
<td>1</td>
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</table>

MINIMUM TOTAL: 14 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.

FIRE 101
FIRE 102
PFHW 109
FIRE SCIENCE TECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 10123 (Effective Fall 1997–Summer 2002)

This degree program prepares an individual for a career in fire fighting. Included in this curriculum is successful completion of the 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 fire hydrants 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 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 students may find it necessary to complete specific coursework in mathematics. For information on how to fulfill all general education requirements, see page 32.

INFORMATION
Contact the Human, Health and Public Service Careers Department, Garvin Vocational-Technical Center, Room 175, telephone number (517) 463-1410.

REQUIREMENTS

<table>
<thead>
<tr>
<th>COURSE CODE</th>
<th>COURSE TITLE</th>
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<tbody>
<tr>
<td>FIRE 100</td>
<td>Introduction to Fire Fighting</td>
<td>3</td>
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<tr>
<td>FIRE 101</td>
<td>Michigan F.F.T.C. Basic Fire Training Level I A &amp; B (See Note 1)</td>
<td>9</td>
</tr>
<tr>
<td>FIRE 102</td>
<td>Michigan F.F.T.C. Basic Fire Training Level II C &amp; D (See Note 1)</td>
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<td>FIRE 110</td>
<td>Fire Prevention and Law</td>
<td>3</td>
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<tr>
<td>FIRE 115</td>
<td>Building Construction for the Fire Service</td>
<td>4</td>
</tr>
<tr>
<td>FIRE 120</td>
<td>Chemistry of Hazardous Materials</td>
<td>3</td>
</tr>
<tr>
<td>FIRE 125</td>
<td>Fire Protection Systems and Equipment</td>
<td>4</td>
</tr>
<tr>
<td>FIRE 130</td>
<td>Hydraulics and Pump Operations</td>
<td>4</td>
</tr>
<tr>
<td>FIRE 150</td>
<td>Fire Command and Operations</td>
<td>4</td>
</tr>
<tr>
<td>FIRE 190</td>
<td>Fire Investigation</td>
<td>4</td>
</tr>
<tr>
<td>FIRE 220</td>
<td>Hazardous Materials in the Fire Service</td>
<td>4</td>
</tr>
<tr>
<td>FIRE 250</td>
<td>Fire Administration</td>
<td>4</td>
</tr>
<tr>
<td>OADM 275</td>
<td>Cultural Differences in Business</td>
<td>3</td>
</tr>
<tr>
<td>PFFH W 109</td>
<td>Emergency Services Fitness I</td>
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<tr>
<td>PFFH W 110</td>
<td>Emergency Services Fitness II</td>
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</tr>
<tr>
<td>SPCH 120</td>
<td>Dynamics of Communication</td>
<td>3</td>
</tr>
<tr>
<td>WRIT 124</td>
<td>Technical Writing</td>
<td>3</td>
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TOTAL: 84 CREDITS

LIMITED CHOICE REQUIREMENTS

<table>
<thead>
<tr>
<th>COURSE CODE</th>
<th>COURSE TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

TOTAL: 0 CREDITS

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

CHOICE 1: General Education Core (See Note 2) 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

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 an Emergency Medical Services 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 review 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.
# DENTAL ASSISTANT
## CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 10193 (Effective Fall 1997–Summer 1998)

Dental assistants assist the dentist with the delivery of dental care and treatment procedures at the chairside in dental offices, public health clinics, dental schools, and hospitals. This program prepares individuals to be Registered Dental Assistants responsible for transferring dental instruments; charting the teeth; preparing and delivering dental materials; taking impressions and making models of the teeth; placing and removing rubber dams; placing and removing temporary crowns; and exposing and processing dental x-ray pictures. Upon graduation from this accredited program one is eligible to take the state of Michigan 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 Assistant Program.

### 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
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 1997/98 academic year. For the most recent and complete information, interested students should contact the Admissions Office, Gannon Vocational-Technical Center, Room 232, telephone number (517) 483-1254. For Dental Assistant career advising information, contact the Dental Advisor at the Dental Assistant Program office, Arts and Sciences Building, Room 0575, telephone number (517) 483-1457.

### REQUIREMENTS FOR ADMISSION TO THE DENTAL ASSISTANT PROGRAM
For current information about admission requirements, students must contact the Admissions Office, Gannon Vocational-Technical Center, Room 232, telephone number (517) 483-1254.

<table>
<thead>
<tr>
<th>REQUIREMENTS CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
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<tbody>
<tr>
<td>DADH 128</td>
<td>Dental Radiography</td>
<td>4</td>
</tr>
<tr>
<td>DAST 110</td>
<td>Dental Instruments</td>
<td>1</td>
</tr>
<tr>
<td>DAST 111</td>
<td>Preclinical Dental Assisting</td>
<td>3</td>
</tr>
<tr>
<td>DAST 112</td>
<td>Dental Anatomy</td>
<td>4</td>
</tr>
<tr>
<td>DAST 114</td>
<td>Preventive Dentistry and Procedures</td>
<td>3</td>
</tr>
<tr>
<td>DAST 116</td>
<td>Dental Materials</td>
<td>3</td>
</tr>
<tr>
<td>DAST 119</td>
<td>Dental Assisting Principles</td>
<td>1</td>
</tr>
<tr>
<td>DAST 120</td>
<td>Clinical Dental Assisting I</td>
<td>6</td>
</tr>
<tr>
<td>DAST 126</td>
<td>Registered Dental Assistant Procedures for the Dental Assistants</td>
<td>3</td>
</tr>
<tr>
<td>DAST 130</td>
<td>Clinical Dental Assisting II</td>
<td>2</td>
</tr>
<tr>
<td>DAST 140</td>
<td>Clinical Dental Assisting III</td>
<td>4</td>
</tr>
<tr>
<td>EMSB 102</td>
<td>CPR for Health Care Professionals</td>
<td>.5</td>
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**MINIMUM TOTAL**

<table>
<thead>
<tr>
<th>TOTAL: 34.5 CREDITS</th>
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<tr>
<td>34.5</td>
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### SUGGESTED COURSE SEQUENCE
Students begin this program each fall semester and courses are offered once a year in the following sequence.

<table>
<thead>
<tr>
<th>I</th>
<th>II</th>
<th>III</th>
</tr>
</thead>
<tbody>
<tr>
<td>DAST 110</td>
<td>DADH 128</td>
<td>DAST 140</td>
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<td>DAST 111</td>
<td>DAST 120</td>
<td>DAST 126</td>
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<td>DAST 112</td>
<td>DAST 126</td>
<td>DAST 130</td>
</tr>
<tr>
<td>DAST 114</td>
<td>DAST 130</td>
<td>DAST 116</td>
</tr>
<tr>
<td>DAST 118</td>
<td>DAST 116</td>
<td>EMSB 102</td>
</tr>
</tbody>
</table>
DENTAL HYGIENIST
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 10279 (Effective Fall 1997–Spring 1999)

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 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 mathematical competency requirement. To fulfill the mathematical competency requirement, some students may find it necessary to complete specific coursework 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 1997/98 academic year. For the most recent and complete information, interested students should contact the Admissions Office, Gannon Vocational-Technical Center, Room 222, 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 0677, telephone number (517) 483-1457.

REQUIREMENTS FOR ADMISSION TO THE DENTAL HYGIENIST PROGRAM
For current information on admission requirements, students must contact the Admissions Office, Gannon Vocational-Technical Center, Room 222, telephone number (517) 483-1254.

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<tr>
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<tr>
<td>ANAT 201 Human Anatomy</td>
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<td>DADH 126 Dental Radiography</td>
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</tr>
<tr>
<td>DHYN 110 Preclinical Dental Hygiene</td>
<td>5</td>
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<tr>
<td>DHYN 112 Oral Anatomy</td>
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<tr>
<td>DHYN 114 Oral Pathology</td>
<td>2</td>
</tr>
<tr>
<td>DHYN 116 Dental Pharmacology</td>
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</tr>
<tr>
<td>DHYN 120 Clinical Dental Hygiene I</td>
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<tr>
<td>DHYN 122 Principles of Periodontics</td>
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<tr>
<td>DHYN 124 Nutrition and Oral Health</td>
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<tr>
<td>DHYN 126 Dental Materials and Methods</td>
<td>3</td>
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<tr>
<td>DHYN 210 Clinical Dental Hygiene II</td>
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<tr>
<td>DHYN 212 Advanced Dental Hygiene Procedures</td>
<td>4</td>
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<tr>
<td>DHYN 214 Clinical Oral Pathology</td>
<td>1</td>
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<tr>
<td>DHYN 216 Dental Public Health and Education</td>
<td>2</td>
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<tr>
<td>DHYN 220 Clinical Dental Hygiene III</td>
<td>7</td>
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<tr>
<td>DHYN 222 Community Oral Health</td>
<td>4</td>
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<td>EMSB 102 CPR for Health Care Professionals</td>
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<tr>
<td>MICR 203 Microbiology</td>
<td>3</td>
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<tr>
<td>PHGY 202 Human Physiology</td>
<td>4</td>
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<tr>
<td>SPCH 120 Dynamics of Communication</td>
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LIMITED CHOICE REQUIREMENTS

<table>
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<tr>
<th>TOTAL: 6 CREDITS</th>
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<tr>
<td>CHOOSE 1:</td>
</tr>
<tr>
<td>General Education Core Areas</td>
</tr>
<tr>
<td>Writing Core Area</td>
</tr>
<tr>
<td>Speech Communication Core Area (See Note 1)</td>
</tr>
<tr>
<td>Science/Technology Core Area (See Note 1)</td>
</tr>
<tr>
<td>Global Perspectives and Diversity Core Area</td>
</tr>
<tr>
<td>MINIMUM TOTAL</td>
</tr>
</tbody>
</table>

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 Hygienist licensure exams.
3. Dental Hygienist students desiring eligibility to sit for the Michigan Registered Dental Assistant licensure exam must also successfully complete DHYN 230, RDA Prep, 3 credits, offered Spring semester.

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.

<table>
<thead>
<tr>
<th>I</th>
<th>II</th>
<th>III</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANAT 201</td>
<td>PHGY 202</td>
<td>MICR 203</td>
</tr>
<tr>
<td>Lim.Ch.</td>
<td>SPCH 120</td>
<td>Lim.Ch.</td>
</tr>
<tr>
<td>IV</td>
<td>V</td>
<td>VI</td>
</tr>
<tr>
<td>DHYN 110</td>
<td>DADH 126</td>
<td>DHYN 210</td>
</tr>
<tr>
<td>DHYN 112</td>
<td>DHYN 120</td>
<td>DHYN 212</td>
</tr>
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<td>DHYN 114</td>
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<td>DHYN 216</td>
</tr>
<tr>
<td>EMSB 102</td>
<td>DHYN 126</td>
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</tbody>
</table>
DIAGNOSTIC MEDICAL SONOGRAPHY ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 10790 (Effective Fall 1997–Summer 1998)

Program prepares an individual to operate ultrasound equipment. The sonographer produces images to demonstrate body parts and assist the physician in the diagnosis of medical abnormalities using equipment with a high frequency sound wave (much like sound). Graduates of the program will be eligible for examination by the American Registry of Diagnostic Medical Sonographers.

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 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 students may find it necessary to complete specific coursework in mathematics. For information on how to fulfill all general education requirements, see page 52.

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 1997/98 academic year. For the most recent and complete information, interested students should contact the Admissions Office, Gannon Vocational-Technical Center, Room 232, 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 232, telephone number (517) 483-1254.

REQUIREMENTS

CODE | TITLE | TOTAL: 51 CREDITS
--- | --- | ---
IDMS 260 | Sonographic Introduction | 2
IDMS 201 | General Sonography I: Abdomen | 4
IDMS 202 | OB/GYN Sonography I | 4
IDMS 219 | Sonographic Imaging | 1
IDMS 234 | Sonographic Physics | 2
IDMS 245 | Sonographic Instrumentation | 2
IDMS 285 | General Sonography II: Abdomen and Small Parts | 4
IDMS 266 | OB/GYN Sonography II | 3
IDMS 280 | Introduction to Clinical Experience I | 6
IDMS 281 | Clinical Experience II | 9
IDMS 282 | Clinical Experience III | 12

LIMITED CHOICE REQUIREMENTS

COMPLETE: 12 CREDITS

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

CHOICE 1: General Education Core Areas

(See the GENERAL EDUCATION section above)

<table>
<thead>
<tr>
<th>CREDIT HOURS</th>
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<tbody>
<tr>
<td>Writing Core Area</td>
</tr>
<tr>
<td>Speech Communication Core Area</td>
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<tr>
<td>Science-Technology Core Area</td>
</tr>
<tr>
<td>Global Perspectives and Diversity Core Area</td>
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</table>

MINIMUM TOTAL: 53

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 have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.
EMERGENCY MEDICAL SERVICES
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 10276 (Effective Fall 1997–Summer 2002)

This degree program prepares the individual extensively for a career in emergency medical care. Included in this curriculum are the Basic EMT and Paramedic Certificate Program requirements. In addition, students elect course work designed to prepare them for new and expanding roles in the field of EMS. The elective courses include preparation in the skills and knowledge for: (1) the expanded scope of practice in the prehospital setting, (2) hospital or walk-in clinic paramedic, (3) critical care transport specialist, (4) medical treatment of victims of hazardous material exposure, (5) EMS management, (6) teaching injury and illness prevention, and (7) teaching emergency first aid. 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 students may find it necessary to complete specific coursework 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 175, telephone number (517) 483-1419.

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>TOTAL: 62 CREDIT HOURS</th>
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<tbody>
<tr>
<td>ANAT 145</td>
<td>Introductory Anatomy and Physiology</td>
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<tr>
<td>CISB 200</td>
<td>Information Systems Technology and Problem Solving</td>
</tr>
<tr>
<td>EMTA 101</td>
<td>Basic EMT I</td>
</tr>
<tr>
<td>EMTA 102</td>
<td>Basic EMT II</td>
</tr>
<tr>
<td>EMTA 103</td>
<td>Basic EMT III</td>
</tr>
<tr>
<td>EMTA 104</td>
<td>Basic EMT IV</td>
</tr>
<tr>
<td>EMTA 112</td>
<td>Basic EMT Clinical</td>
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<tr>
<td>OADM 275</td>
<td>Cultural Differences in Business</td>
</tr>
<tr>
<td>PARA 221</td>
<td>Medical Trauma I</td>
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<tr>
<td>PARA 222</td>
<td>Medical Trauma II</td>
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<tr>
<td>PARA 231</td>
<td>Cardiology I</td>
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<tr>
<td>PARA 232</td>
<td>Cardiology II</td>
</tr>
<tr>
<td>PARA 241</td>
<td>Pharmacology I</td>
</tr>
<tr>
<td>PARA 242</td>
<td>Pharmacology II</td>
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<tr>
<td>PARA 251</td>
<td>Skills I</td>
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<td>PARA 261</td>
<td>Clinical I</td>
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<td>Clinical II</td>
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<td>PARA 263</td>
<td>Paramedic Internship</td>
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<td>PFHW 111</td>
<td>Emergency Services Fitness I</td>
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<tr>
<td>PFHW 112</td>
<td>Emergency Services Fitness II</td>
</tr>
<tr>
<td>SPCH 110</td>
<td>Oral Communication in the Workplace</td>
</tr>
<tr>
<td>WRIT 124</td>
<td>Technical Writing</td>
</tr>
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</table>

LIMITED CHOICE REQUIREMENTS

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

<table>
<thead>
<tr>
<th>CHOICE 2:</th>
<th>EMS Requirements (See Note 2)</th>
<th>6 Credits</th>
</tr>
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<tbody>
<tr>
<td>AHCC 110</td>
<td>Pharmacology-Allied Health</td>
<td>2</td>
</tr>
<tr>
<td>EMTA 105</td>
<td>Ambulance Driving</td>
<td>1</td>
</tr>
<tr>
<td>EMTA 108</td>
<td>Legal Issues in Emergency Medical Services</td>
<td>2</td>
</tr>
<tr>
<td>EMTA 114</td>
<td>Rescue, Extrication, and Dangerous Situations</td>
<td>3</td>
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<tr>
<td>EMTA 222</td>
<td>EMS Instructor Coordinator</td>
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<td>EMTA 223</td>
<td>Advanced EMS I: Critical Care EMS</td>
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<td>Advanced EMS II: Hospital Paramedic</td>
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<td>EMTA 225</td>
<td>Medical Hazardous Material</td>
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<td>EMTA 226</td>
<td>Emergency Medical Services Management</td>
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</table>

MINIMUM TOTAL: 70

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, 223, 224, 225 and/or 226 to complete the associate degree.
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.

<table>
<thead>
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<td>ANAT 145</td>
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<tr>
<td>CISB 200</td>
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<td>EMTA 104</td>
<td>PARA 221</td>
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<td>PARA 221</td>
<td>PARA 232</td>
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<td>WRIT 124</td>
<td>OADM 275</td>
<td>PARA 241</td>
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<td>PARA 251</td>
<td>PARA 262</td>
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<td>SPCH 110</td>
<td>PARA 261</td>
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<td></td>
<td></td>
<td>Lim.Ch.</td>
<td>PARA 263</td>
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<td>Lim.Ch.</td>
<td>PARA 263</td>
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<td></td>
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<td>PFHW 111</td>
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<td></td>
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<td>PFHW 112</td>
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98 ■ LANSING COMMUNITY COLLEGE CATALOG 1997–98
BASIC EMERGENCY MEDICAL SERVICES
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 12289 (Effective Fall 1997–Summer 2002)

This certificate program prepares an individual to be a basic emergency medical technician (EMT). Basic EMTs perform immediate basic emergency care in medical and traumatic emergencies. Basic EMT's staff ambulances and are employed in hospitals. State licensing is required.

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 Human, Health and Public Service Careers Department, Gannon Vocational-Technical Center, Room 175, telephone number (517) 483-1410.

REQUIREMENTS

<table>
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<tr>
<th>CODE</th>
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<td>AHCC 110</td>
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<td>Introductory Anatomy and Physiology</td>
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<tr>
<td>CISB 200</td>
<td>Information Systems Technology and Problem Solving</td>
<td>3</td>
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<td>EMTA 101</td>
<td>Basic EMT I</td>
<td>4</td>
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<tr>
<td>EMTA 102</td>
<td>Basic EMT II</td>
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<tr>
<td>EMTA 103</td>
<td>Basic EMT III</td>
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<tr>
<td>EMTA 104</td>
<td>Basic EMT IV</td>
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<tr>
<td>EMTA 105</td>
<td>Ambulance Driving</td>
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<td>EMTA 108</td>
<td>Legal issues in Emergency Medical Services</td>
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<td>EMTA 112</td>
<td>Basic EMT Clinical</td>
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<td>EMTA 114</td>
<td>Rescue, Extraction, and Dangerous Situations</td>
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<tr>
<td>WRIT 124</td>
<td>Technical Writing</td>
<td>3</td>
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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.

<table>
<thead>
<tr>
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<tr>
<td>ANAT 145</td>
<td>AHCC 110</td>
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<td>CISB 200</td>
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<td>EMTA 105</td>
<td>EMTA 112</td>
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<td>EMTA 114</td>
<td>WRIT 124</td>
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</table>

MASSAGE THERAPY
CERTIFICATE OF COMPLETION

Curriculum Code: 10180 (Effective Fall 1997–Summer 2002)

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 and health spas. 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 Class 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 175, telephone number (517) 483-1410.

REQUIREMENTS

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<td>ANAT 145</td>
<td>Introductory Anatomy and Physiology</td>
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<td>MASH 270</td>
<td>Massage Therapy - Beginning</td>
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<tr>
<td>MASH 271</td>
<td>Massage Therapy - Intermediate</td>
<td>2</td>
</tr>
<tr>
<td>MASH 273</td>
<td>Human Structural Dynamics for Massage Therapy</td>
<td>2</td>
</tr>
<tr>
<td>MASH 274</td>
<td>Massage Lab Practicum (See Note 1)</td>
<td>2</td>
</tr>
<tr>
<td>MASH 275</td>
<td>Touch for Health 1</td>
<td>1</td>
</tr>
<tr>
<td>MASH 277</td>
<td>Polarity Therapy 1</td>
<td>1</td>
</tr>
<tr>
<td>MASH 279</td>
<td>Business Applications for Massage Therapists</td>
<td>2</td>
</tr>
<tr>
<td>MASH 280</td>
<td>Clinical Approaches to Therapeutic Massage</td>
<td>3</td>
</tr>
<tr>
<td>MASH 281</td>
<td>Sports Massage Techniques</td>
<td>2</td>
</tr>
<tr>
<td>PFWH 163</td>
<td>Healthy Lifestyles</td>
<td>2</td>
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<tr>
<td>PFWH 161</td>
<td>Stress Management</td>
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LIMITED CHOICE REQUIREMENTS

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

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<tr>
<th>CHOICE 1:</th>
<th>2 Credits</th>
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<tbody>
<tr>
<td>MASH 278</td>
<td>Polarity Therapy II</td>
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<tr>
<td>PFWH 161</td>
<td>Self Awareness. Key to Wellness</td>
</tr>
<tr>
<td>PFWH 167</td>
<td>The Consumer and Health Issues</td>
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MINIMUM TOTAL 27

NOTES
1. The Massage Lab Practicum consists of 96 hours of supervised massage work. Students must complete the lab practicum within one (1) year of enrolling in the course. A minimum of 32 supervised lab hours must be completed each semester of enrollment. Students will receive an "I" grade until the total 96 required hours are completed.
2. The Massage Therapy Program does not fulfill Associate Degree requirements. Students must apply for a certificate which is granted through the Human, Health and Public Service Careers Department.
3. The Certificate of Completion is not affiliated with any national certification organization.
4. All courses must be completed with a 2.5 grade or better to receive the 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.

<table>
<thead>
<tr>
<th>I</th>
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<th>IV</th>
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<tbody>
<tr>
<td>ANAT 145</td>
<td>MASH 271</td>
<td>MASH 274</td>
<td>MASH 279</td>
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<td>MASH 270</td>
<td>MASH 273</td>
<td>MASH 277</td>
<td>MASH 281</td>
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<td>MASH 275</td>
<td>MASH 275</td>
<td>MASH 280</td>
<td>Lim.Ch.</td>
</tr>
<tr>
<td>PFWH 163</td>
<td>PFWH 181</td>
<td></td>
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</tbody>
</table>
MEDICAL ASSISTANT
CERITIFICATE OF ACHIEVEMENT


Program prepares a person to assist the physician in patient care management. The role of the medical assistant is administrative and clinical. Duties include admitting patients, appointment scheduling, telephone and written communication, managing patient records, obtaining patient histories, and assisting the physician in office procedures. Medical assistants work in clinics, medical offices, medical centers, medical insurance companies and various other health-related industries. The medical assistant may become certified through a national exam offered by the American Association of Medical Assistants.

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 Medical Assistant Program.

PREREQUISITES
Students should see the Course Descriptions section of this catalog or the Glass Schedule for course prerequisite information. Basic skills assessment and advising information may be found on page 6 of this catalog.

INFORMATION
The admission and 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 1997/98 academic year. For the most recent and complete information, interested students should contact the Admissions Office, Gannon Vocational-Technical Center, Room 232, telephone number (517) 463-1254.

REQUIREMENTS FOR ADMISSION TO THE MEDICAL ASSISTANT PROGRAM
For current information about admission requirements, students must contact the Admissions Office, Gannon Vocational-Technical Center, Room 232, telephone number (517) 463-1254.

REQUIREMENTS

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<td>AHCC 110</td>
<td>Pharmacology-Allied Health (See Note 1)</td>
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<tr>
<td>AHCC 112</td>
<td>Health Law and Ethics (See Note 1)</td>
<td>2</td>
</tr>
<tr>
<td>ANAT 145</td>
<td>Introductory Anatomy and Physiology</td>
<td>4</td>
</tr>
<tr>
<td>CHSE 111</td>
<td>Medical Insurance Billing I</td>
<td>3</td>
</tr>
<tr>
<td>CHSE 121</td>
<td>Medical Terminology for Allied Health I</td>
<td>2.5</td>
</tr>
<tr>
<td>CHSE 122</td>
<td>Medical Terminology for Allied Health II (See Note 1)</td>
<td>2.5</td>
</tr>
<tr>
<td>MEDA 100</td>
<td>MA Administrative/Communication Skills</td>
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</tr>
<tr>
<td>MEDA 131</td>
<td>Clinical Skills I</td>
<td>3</td>
</tr>
<tr>
<td>MEDA 132</td>
<td>Clinical Skills II</td>
<td>3</td>
</tr>
<tr>
<td>MEDA 141</td>
<td>Basic Medical Laboratory Procedures</td>
<td>2</td>
</tr>
<tr>
<td>MEDA 142</td>
<td>Advanced Medical Laboratory Procedures</td>
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</tr>
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<td>MEDA 181</td>
<td>Administrative Internship</td>
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<tr>
<td>OADM 207</td>
<td>Medical Transcription (See Note 1)</td>
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LIMITED CHOICE REQUIREMENTS

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<th>TOTAL: 2 CREDITS</th>
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Complete the indicated number of credits from each CHOICE listed below.

CHOICE 1: Computer 2 Credits
CABS 102 Microcomputers for Non-Majors 2
CABS 114 WordPerfect - Beginning for DOS 2

MINIMUM TOTAL 38

NOTES
1. This course may be taken prior to admission to the program.
2. Complete the courses required for program with a minimum 2.5 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.

<table>
<thead>
<tr>
<th>I</th>
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<td>ANAT 145</td>
<td>AHCC 112</td>
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<td>MEDA 181</td>
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<td>CHSE 111</td>
<td>MEDA 132</td>
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<td>CHSE 122</td>
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<td>OADM 207</td>
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<td>MEDA 131</td>
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<tr>
<td>MEDA 141</td>
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MULTI-SKILLED PATIENT CARE TECHNICIAN
CERTIFICATE OF COMPLETION

Curriculum Code: 10786 (Effective Fall 1997-Summer 2002)

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 coop-
eration with various medical facilities.

PREREQUISITES
Students should see the Course Descriptions section of this catalog or the Class
Schedule for course prerequisite information. Basic skills assessment and advis-
ing 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 173, telephone (517) 463-1410.

REQUIREMENTS

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<td>AHCC 111</td>
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<td>AHCC 112</td>
<td>Health Law and Ethics</td>
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<tr>
<td>CHSE 101</td>
<td>Acute Care Nurse Assistant/Orderly</td>
<td>6.5</td>
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<tr>
<td>CHSE 121</td>
<td>Medical Terminology for Allied Health I</td>
<td>2.5</td>
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<tr>
<td>CHSE 143</td>
<td>Phlebotomy Technician</td>
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MINIMUM TOTAL 14 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 se-
quence 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.

| AHCC 112 | AHCC 111      |
| CHSE 101 | CHSE 143      |
| CHSE 121 |               |
NURSING, LPN OPTION
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 10235 (Effective Fall 1997–Fall 1998)

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).

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 Licensure 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 Class 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 1997/98 academic year. For the most recent and complete information, interested students should contact the Admissions Office, Room 232, Glennon 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 232, Glennon Vocational-Technical Center, telephone (517) 483-1254.

<table>
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<td>ANAT 201</td>
<td>Human Anatomy</td>
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<td>NURS 150</td>
<td>Nursing Process I: Introduction to Nursing [See Note 1]</td>
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<tr>
<td>NURS 160</td>
<td>Nursing Process II: Common Acute Health Problems</td>
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<tr>
<td>NURS 165</td>
<td>Nursing Process III: Family Health I</td>
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<tr>
<td>NURS 180</td>
<td>Practical Nursing Note</td>
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<tr>
<td>NURS 200</td>
<td>Pharmacology [See Note 1]</td>
</tr>
<tr>
<td>PHFW 163</td>
<td>Healthy Lifestyles</td>
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<tr>
<td>PHGY 202</td>
<td>Human Physiology</td>
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<td>PSYC 205</td>
<td>Introduction to Psychology</td>
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<td>PSYC 206</td>
<td>Human Growth and Development</td>
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<tr>
<td>WRT 121</td>
<td>Composition I</td>
</tr>
<tr>
<td><strong>MINIMUM TOTAL</strong></td>
<td></td>
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</table>

NOTES
1. NURS 200 may be taken two years prior to admission to the Nursing Program or concurrently with NURS 150.
2. Current Basic Cardiac Life Support Certification (BCLS) is required throughout the program. (EMSB 102 or American Red Cross "Provider C").
NURSING, RN OPTION
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 10222 (Effective Fall 1997–Fall 1999)

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 be a primary care provider to 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 Licensure Examination-Registered Nurse.

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 Class Schedule for course prerequisite information. Basic skills assessment and advising information may be found on page 6 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 students may find it necessary to complete specified coursework 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 1997/98 academic year. For the most recent and complete information, interested students should contact the Admissions Office, Gannon Vocational-Technical Center, Room 232, 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 232, telephone number (517) 483-1254.

<table>
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<td>ANAT 201</td>
<td>Human Anatomy</td>
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<td>MICR 203</td>
<td>Microbiology</td>
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<td>NURS 150</td>
<td>Nursing Process I: Introduction to Nursing (See Note 1)</td>
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<tr>
<td>NURS 160</td>
<td>Nursing Process II: Common Acute Health Problems</td>
</tr>
<tr>
<td>NURS 165</td>
<td>Nursing Process III: Family Health I</td>
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<td>NURS 180</td>
<td>Practical Nursing Role</td>
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<tr>
<td>NURS 200</td>
<td>Pharmacology (See Note 1)</td>
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<td>NURS 200</td>
<td>Nursing Process IV: Family Health II</td>
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<td>NURS 265</td>
<td>Nursing Process V: Family Health III</td>
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<td>NURS 280</td>
<td>Nursing Process VI: Chronic Health Problems</td>
</tr>
<tr>
<td>NURS 285</td>
<td>Nursing Process VII: Acute/Critical Health Problems</td>
</tr>
<tr>
<td>NURS 290</td>
<td>Nursing Process VIII: ADN as Provider and Manager of Care</td>
</tr>
<tr>
<td>PFHW 163</td>
<td>Healthy Lifestyles</td>
</tr>
<tr>
<td>PHGY 202</td>
<td>Human Physiology</td>
</tr>
<tr>
<td>PSYC 200</td>
<td>Introduction to Psychology</td>
</tr>
<tr>
<td>PSYC 205</td>
<td>Human Growth and Development</td>
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<tr>
<td>WRT 121</td>
<td>Composition I</td>
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LIMITED CHOICE REQUIREMENTS

CHOICE 1: General Education Core Areas

<table>
<thead>
<tr>
<th>(See the GENERAL EDUCATION section above)</th>
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<tbody>
<tr>
<td>Writing Core Area (See Note 2)</td>
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<td>Speech Communication Core Area</td>
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<tr>
<td>Science/Technology Core Area (See Note 2)</td>
</tr>
<tr>
<td>Global Perspectives and Diversity Core Area</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL

75

NOTES

1. NURS 200 may be taken up to two years prior to admission into the program or concurrently with NURS 150.
2. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.
3. Although not required for the Associate degree, MICR 204 is strongly recommended to be taken concurrent with MICR 203. It will be required for nurses who continue on to a four-year university.
4. Current Basic Cardiac Life Support Certification (BCLS) is required throughout the program. (EMSB 102 or American Red Cross "Provider C")
5. 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 requirements for admission. 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 he or she has successfully completed all of the courses listed in a previous sequence semester. NURS 200 is the only NURS- prefix course in that offered summer semester.

<table>
<thead>
<tr>
<th>Semester</th>
<th>Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>ANAT 201  NURS 150  NURS 160  MICR 203</td>
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<tr>
<td>II</td>
<td>PFHW 163  NURS 200  NURS 165  NURS 260</td>
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<td>III</td>
<td>PSYC 200  PHGY 202  NURS 180  NURS 265</td>
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<tr>
<td>IV</td>
<td>WRT 121  PSYC 205  Lim.Ch.</td>
</tr>
<tr>
<td>V</td>
<td>NURS 280  NURS 285  NURS 290  Lim.Ch.</td>
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</table>

LANSING COMMUNITY COLLEGE CATALOG 1997-98 n 103
PARAMEDIC
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 10272 (Effective Fall 1997-Summer 1998)

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 Class Schedule for course prerequisites information. Basic skills assessment and advising information may be found on page 6 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 1997/98 academic year. For the most recent and complete information, interested students should contact the Admissions Office, Gannon Vocational-Technical Center, Room 232, 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 232, telephone number (517) 483-1254.

<table>
<thead>
<tr>
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<tr>
<td>CODE TITLE</td>
<td>CREDIT HOURS</td>
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<tr>
<td>PARA 221 Medical Trauma I</td>
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<tr>
<td>PARA 222 Medical Trauma II</td>
<td>4</td>
</tr>
<tr>
<td>PARA 231 Cardiology I</td>
<td>2</td>
</tr>
<tr>
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<tr>
<td>PARA 241 Pharmacology I</td>
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<td>PARA 251 Skills I</td>
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<td>PARA 252 Skills II</td>
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<tr>
<td>PARA 261 Clinical I</td>
<td>3</td>
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<tr>
<td>PARA 262 Clinical II</td>
<td>4</td>
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<tr>
<td>PARA 263 Paramedic Internship</td>
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<tr>
<td>FF HW 111 Emergency Services Fitness III</td>
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<tr>
<td>FF HW 112 Emergency Services Fitness IV</td>
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</table>

MINIMUM TOTAL 32

NOTES
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.

| PARA 221 | PARA 222 |
| PARA 231 | PARA 232 |
| PARA 241 | PARA 242 |
| PARA 251 | PARA 252 |
| PARA 261 | PARA 262 |
| FF HW 111 | PARA 263 |
| FF HW 112 |
RADIATION THERAPY
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 12664 (Effective Fall 1997-Spring 1999)

A radiation therapist is a professional who assists the radiation oncologist in the care and treatment of a cancer patient. Responsibilities include, but are not limited to, the delivery of accurate treatments as prescribed; accurate documentation of treatments; assisting in simulation and treatment planning; emotional support and education of patients, their families, new staff and students. Radiation therapists are employed in hospitals, free standing clinics, universities, and private clinics. 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 Radiation Therapy Program.

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 students may find it necessary to complete specific coursework 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 1997-98 academic year. For the most recent and complete information, interested students should contact the Admissions Office, Gannon Vocational-Technical Center, Room 232, telephone number (517) 483-1254.

REQUIREMENTS FOR ADMISSION TO THE RADIATION THERAPY PROGRAM
For current information about admission requirements, students must contact the Admissions Office, Gannon Vocational-Technical Center, Room 232, telephone number (517) 483-1254.

REQUIREMENTS

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<tr>
<th>CODE</th>
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<th>CREDIT HOURS</th>
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<td>IRAD 105</td>
<td>Introduction Radiation Therapy</td>
<td>3</td>
</tr>
<tr>
<td>IRAD 106</td>
<td>Oncology Principles Patient Care</td>
<td>1</td>
</tr>
<tr>
<td>IRAD 204</td>
<td>Principles Oncology I</td>
<td>4</td>
</tr>
<tr>
<td>IRAD 205</td>
<td>Principles Oncology II</td>
<td>4</td>
</tr>
<tr>
<td>IRAD 220</td>
<td>Radiation Oncology</td>
<td>2</td>
</tr>
<tr>
<td>IRAD 231</td>
<td>Radiation Therapy Physics</td>
<td>3</td>
</tr>
<tr>
<td>IRAD 232</td>
<td>Advanced Therapy Physics</td>
<td>3</td>
</tr>
<tr>
<td>IRAD 234</td>
<td>Quality Assurance in Radiation Therapy</td>
<td>2</td>
</tr>
<tr>
<td>IRAD 235</td>
<td>Basic Dosimetry</td>
<td>3</td>
</tr>
<tr>
<td>IRAD 240</td>
<td>Radiobiology</td>
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</tr>
<tr>
<td>IRAD 285</td>
<td>Clinical Experience I</td>
<td>3</td>
</tr>
<tr>
<td>IRAD 286</td>
<td>Clinical Experience II</td>
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<td>IRAD 287</td>
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<tr>
<td>IRAD 288</td>
<td>Clinical Experience IV</td>
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<td>IRAD 289</td>
<td>Clinical Experience V</td>
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TOTAL: 60 CREDITS

LIMITED CHOICE REQUIREMENTS

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

CHOICE 1: General Education Core Areas (See Note 1) 12 Credits

- Writing Core Area 3
- Speech Communication Core Area 3
- Science/Technology Core Area 3
- Global Perspectives and Diversity Core Area 3

MINIMUM TOTAL: 72

NOTES
1. It is strongly recommended that these courses be completed prior to admission to the program due to the heavy IRAD credit load required once a student is accepted into 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 have transferred in courses from another school) should contact an academic advisor or counselor for help with adjustments.

<table>
<thead>
<tr>
<th>I</th>
<th>II</th>
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<td>IRAD 105</td>
<td>IRAD 106</td>
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<td>IRAD 237</td>
<td>IRAD 235</td>
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<td>IRAD 232</td>
<td>IRAD 232</td>
<td>Lim. Ch.</td>
<td>IRAD 288</td>
</tr>
<tr>
<td>IRAD 285</td>
<td>IRAD 270</td>
<td>Lim. Ch.</td>
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<td>IRAD 289</td>
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</table>

LANSING COMMUNITY COLLEGE CATALOG 1997-98 ■ 105
RADIATION THERAPY, ADVANCED STANDING
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 10758 (Effective Fall 1997–Spring 1999)

Students with four or more years of patient care experience (delivery of treatment to cancer patients) in radiation therapy may complete the Radiation Therapy Program as an advanced standing student. This certificate of achievement program does not include the clinical coursework required of non-experienced students seeking an associate 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.

This is a selective admission program. In order to be considered as a candidate for the 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 Radiation Therapy Program.

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
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 1997/98 academic year. For the most recent and complete information, interested students should contact the Admissions Office, Gannon Vocational-Technical Center, Room 232, telephone number (517) 483-1254.

REQUIREMENTS FOR ADMISSION TO THE RADIATION THERAPY, ADVANCED STANDING PROGRAM
For current information about admission requirements, students must contact the Admissions Office, Gannon Vocational-Technical Center, Room 232, telephone number (517) 483-1254.

REQUIREMENTS FOR CREDIT HOURS

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<td>IRAD 105</td>
<td>Introduction Radiation Therapy</td>
<td>3</td>
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<tr>
<td>IRAD 108</td>
<td>Oncology Principles Patient Care</td>
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<td>IRAD 204</td>
<td>Principles Oncology I</td>
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<td>IRAD 205</td>
<td>Principles Oncology II</td>
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</tr>
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<td>IRAD 220</td>
<td>Clinical Radiation Oncology</td>
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<tr>
<td>IRAD 231</td>
<td>Radiation Therapy Physics</td>
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<tr>
<td>IRAD 232</td>
<td>Advanced Therapy Physics</td>
<td>3</td>
</tr>
<tr>
<td>IRAD 234</td>
<td>Quality Assurance in Radiation Therapy</td>
<td>2</td>
</tr>
<tr>
<td>IRAD 235</td>
<td>Basic Dosimetry</td>
<td>3</td>
</tr>
<tr>
<td>IRAD 270</td>
<td>Radiobiology</td>
<td>2</td>
</tr>
<tr>
<td>IRAD 290</td>
<td>Advanced Clinical Skills (See Note 1)</td>
<td>7</td>
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</table>

MINIMUM TOTAL 34 CREDITS

NOTES
1. Advanced standing students must register for IRAD 290 during final 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 have transferred in courses from another school) should contact an academic advisor or counselor for help with adjustments.

<table>
<thead>
<tr>
<th>I</th>
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<td>IRAD 235</td>
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<tr>
<td>IRAD 270</td>
<td>IRAD 290</td>
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</table>
RADIOLOGIC TECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 10196 (Effective Fall 1997–Summer 2000)

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 Class Schedule for course prerequisite information. Basic skills assessment and advising information may be found on page 9 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 students may find it necessary to complete specific coursework 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 1997/98 academic year. For the most recent and complete information, interested students should contact the Admissions Office, Gannon Vocational-Technical Center, Room 232, 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 232, telephone number (517) 483-1254.

REQUIREMENTS

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<td>AHCC 104</td>
<td>Patient Care Principles</td>
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<td>ANAT 201</td>
<td>Human Anatomy</td>
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<tr>
<td>IRTX 100</td>
<td>Introduction to Imaging</td>
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<tr>
<td>IRTX 111</td>
<td>Radiographic Positioning I</td>
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<tr>
<td>IRTX 112</td>
<td>Radiographic Positioning II</td>
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<tr>
<td>IRTX 113</td>
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<td>IRTX 121</td>
<td>Radiographic Exposure</td>
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<td>IRTX 131</td>
<td>Radiologic Physics</td>
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<td>IRTX 132</td>
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<td>IRTX 200</td>
<td>Introduction to Radiologic Pathology</td>
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<td>IRTX 210</td>
<td>Radiographic Department Management</td>
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<td>IRTX 212</td>
<td>Clinical Practice I (See Note 1)</td>
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<td>IRTX 215</td>
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<td>Imaging Update</td>
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<td>IRTX 233</td>
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<td>PHGY 202</td>
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TOTAL: 57 CREDITS

LIMITED CHOICE REQUIREMENTS

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<thead>
<tr>
<th>TOTAL: 9 CREDITS</th>
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<thead>
<tr>
<th>CHOICE 1: General Education Core Areas</th>
<th>9 Credits</th>
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<tr>
<td>Writing Core Area</td>
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</table>

MINIMUM TOTAL: 76

NOTES
1. These course codes are for students admitted fall semester. Students admitted in the spring will take the same course content with different course codes.
2. Students completing REQUIREMENTS have fulfilled the requirements for this core area.

SUGGESTED COURSE SEQUENCE
Courses listed in Semester I and II below must be completed prior to admission to the Radiologic Technology Program as part of the requirements for admission. The program admits students in the fall and spring semesters. 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.

<table>
<thead>
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<th>I</th>
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### RESPIRATORY THERAPIST
**ASSOCIATE IN APPLIED SCIENCE DEGREE**

Curriculum Code: 1024 (Effective Fall 1997–Spring 1999)

A respiratory therapist is a key member of the health care team working alongside physicians, nurses and other allied health professionals. They provide basic respiratory care services to patients with pulmonary disorders. The majority of therapists are employed by hospitals; however, other opportunities include sub-acute care, home care, and pulmonary and/or cardiac rehabilitation. Program graduates are eligible to complete a series of nationally recognized examinations leading to recognition as a Registered Respiratory Therapist.

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 Respiratory Therapist Program.

#### 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 students may find it necessary to complete specific coursework 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 1997/98 academic year. For the most recent and complete information, interested students should contact the Admissions Office, Gannon Vocational-Technical Center, Room 232, telephone number (517) 483-1254.

#### REQUIREMENTS FOR ADMISSION TO THE RESPIRATORY THERAPIST PROGRAM
For current information about admission requirements, students must contact the Admissions Office, Gannon Vocational-Technical Center, Room 232, telephone number (517) 483-1254.

#### REQUIREMENTS
**TOTAL: 63.5 CREDITS**

<table>
<thead>
<tr>
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<tr>
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<td>Human Anatomy</td>
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<td>CHSE 121</td>
<td>Medical Terminology for Allied Health I</td>
<td>2.5</td>
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<tr>
<td>CHEM 120</td>
<td>Organic and Biological Chemistry</td>
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<tr>
<td>PHGY 202</td>
<td>Human Physiology</td>
<td>4</td>
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<td>RESP 129</td>
<td>Cardiopulmonary Applied Basic Sciences and Microbiology</td>
<td>2</td>
</tr>
<tr>
<td>RESP 125</td>
<td>Cardiopulmonary Anatomy and Physiology</td>
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</tr>
<tr>
<td>RESP 126</td>
<td>Cardiopulmonary Physiology and Pathophysiology</td>
<td>3</td>
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<tr>
<td>RESP 128</td>
<td>Cardiopulmonary Pharmacology and Metrology</td>
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<tr>
<td>RESP 131</td>
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<tr>
<td>RESP 132</td>
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<td>RESP 133</td>
<td>Respiratory Therapy Technology III</td>
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<td>RESP 142</td>
<td>Respiratory Therapy Clinical Practice I</td>
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<td>RESP 143</td>
<td>Respiratory Therapy Clinical Practice II</td>
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<td>RESP 234</td>
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<td>RESP 244</td>
<td>Advanced Respiratory Clinical Practice III</td>
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<td>6</td>
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<tr>
<td>RESP 251</td>
<td>Practice of Pulmonary Medicine</td>
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<tr>
<td>RESP 252</td>
<td>Respiratory Professional Testing and Management</td>
<td>2</td>
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#### LIMITED CHOICE REQUIREMENTS

**TOTAL: 9 CREDITS**

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

**CHOICE 1: General Education Core Areas (See Note 1)**

<table>
<thead>
<tr>
<th>Subject Area</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Writing Core Area</td>
<td>3</td>
</tr>
<tr>
<td>Speech Communication Core Area</td>
<td>3</td>
</tr>
<tr>
<td>Science/Technology Core Area (See Note 2)</td>
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<tr>
<td>Global Perspectives and Diversity Core Area</td>
<td>3</td>
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</table>

**MINIMUM TOTAL**

|        | 72.5 |

#### NOTES

1. It is strongly recommended that these courses be completed prior to admission to the program due to the heavy RESP credit load required once a student is accepted into the program.
2. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.

#### SUGGESTED COURSE SEQUENCE

Courses listed in semesters I and II below must be completed prior to admission to the Respiratory Therapist Program as part of the requirements for admission. Once admitted to the program, students begin semester III courses during fall semester. Courses with a course code of RESP must be completed in the sequence indicated. 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, have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course Code</th>
<th>Course Title</th>
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<td>Human Anatomy</td>
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<td>CHEM 120</td>
<td>Medical Terminology for Allied Health I</td>
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<tr>
<td>II</td>
<td>RESP 129</td>
<td>Cardiopulmonary Applied Basic Sciences and Microbiology</td>
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<td></td>
<td>RESP 125</td>
<td>Cardiopulmonary Anatomy and Physiology</td>
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</tr>
<tr>
<td></td>
<td>RESP 126</td>
<td>Cardiopulmonary Physiology and Pathophysiology</td>
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<td>RESP 143</td>
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<td></td>
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<td>RESP 245</td>
<td>Advanced Respiratory Clinical Practice IV</td>
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<tr>
<td></td>
<td>RESP 251</td>
<td>Practice of Pulmonary Medicine</td>
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<tr>
<td></td>
<td>RESP 252</td>
<td>Respiratory Professional Testing and Management</td>
<td>2</td>
</tr>
</tbody>
</table>
SURGICAL TECHNOLOGY
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 10216 (Effective Fall 1997–Spring 1998)

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, gowned and gloved, and handing appropriate 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 and 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 Class 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 1997-98 academic year. For the most recent and complete information, interested students should contact the Admissions Office, Gannon Vocational-Technical Center, Room 232, 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 232, telephone number (517) 483-1254.

REQUIREMENTS

<table>
<thead>
<tr>
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<td>AHCC 110</td>
<td>Pharmacology-Allied Health (See Note 1)</td>
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<tr>
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<tr>
<td>ANAT 145</td>
<td>Introductory Anatomy and Physiology</td>
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<td>CHSE 121</td>
<td>Medical Terminology for Allied Health I</td>
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<td>SURG 100</td>
<td>Fundamental Surgical Technician</td>
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<tr>
<td>SURG 101</td>
<td>The Surgical Patient</td>
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<td>SURG 103</td>
<td>Surgical Asepsis</td>
<td>2</td>
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<tr>
<td>SURG 104</td>
<td>Operative Procedures</td>
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<tr>
<td>SURG 121</td>
<td>Applied Surgical Techniques I</td>
<td>1</td>
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<td>SURG 122</td>
<td>Applied Surgical Techniques II</td>
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<td>SURG 123</td>
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</tr>
<tr>
<td>SURG 124</td>
<td>Applied Surgical Techniques IV</td>
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<td></td>
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</table>

MINIMUM TOTAL: 36.5

NOTES
1. This course may be taken prior to admission to the program.
2. Complete the courses required for program with a minimum 2.5 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.

<table>
<thead>
<tr>
<th>I</th>
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<tr>
<td>ANAT 145</td>
<td>AHCC 106</td>
<td>AHCC 112</td>
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<td>CHSE 121</td>
<td>AHCC 110</td>
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<td>SURG 101</td>
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<tr>
<td>SURG 101</td>
<td>SURG 103</td>
<td>SURG 124</td>
</tr>
<tr>
<td>SURG 103</td>
<td>SURG 121</td>
<td>SURG 122</td>
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</tbody>
</table>
HEATING, AIR CONDITIONING, AND REFRIGERATION

ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 10161 (Effective Fall 1997–Summer 2002)

HVAC 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. HVAC 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 people, and understand all aspects of the construction trades. HVAC technicians are employed by HVAC contractors, hospitals, schools, manufacturers, housing and apartment complexes, restaurants, food stores, municipalities, and government organizations.

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 9 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 students may find it necessary to complete specific coursework 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 220, telephone number (517) 483-1338.

REQUIREMENTS

CODE  TITLE  CREDIT HOURS  TOTAL: 54 CREDITS
HVAC 100 Fundamentals of Heating, Ventilating and Air Conditioning  3
HVAC 105 Sheet Metal Fabrication and Installation  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 201 Mechanical Code  4
HVAC 211 Schematics  3
HVAC 220 Heating II  4
HVAC 221 Introduction to Hydronics  3
HVAC 230 Air Conditioning II  4
HVAC 231 Heat Pump  4
HVAC 240 Refrigeration I  4
HVAC 241 Refrigeration II  4
HVAC 250 Pneumatic Control  3
MATH 115 Technical Math II  4

LIMITED CHOICE REQUIREMENTS

TOTAL: 15–16 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

CHOICE 2: Technical Related  3–4 Credits

BLDT 103 Structural Blueprint Reading  4
BLDT 121 Residential Framing and Foundations  4
BLDT 201 BOCA/Uniform Code  3
CNCP 101 PC Applications for Technology  3
COOP 210 Cooperative Education (Technology)  3
WELD 100 Combination Welding  4

MINIMUM TOTAL  69

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.

<p>| | | | |</p>
<table>
<thead>
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<td>HVAC 211</td>
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<td>HVAC 105</td>
<td>HVAC 120</td>
<td>HVAC 220</td>
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</table>

HEATING AND AIR CONDITIONING

CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 10143 (Effective Fall 1997–Summer 2002)

Students receive instruction on how to install, service, and maintain heating, air conditioning, and refrigeration systems, including the sheet metal and electrical, to prepare them for an entry-level position.

REQUIREMENTS

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<td>Fundamentals of Heating, Ventilating and Air Conditioning</td>
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<td>Sheet Metal Fabrication and Installation</td>
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<tr>
<td>HVAC 110</td>
<td>Applied Electricity I</td>
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<td>HVAC 111</td>
<td>Applied Electricity II</td>
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<td>HVAC 120</td>
<td>Heating I</td>
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<td>HVAC 130</td>
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<td>Introduction to Hydronics</td>
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<td>HVAC 230</td>
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<td>Heat Pump</td>
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MINIMUM TOTAL  40

SUGGESTED COURSE SEQUENCE

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<tr>
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<td>HVAC 130</td>
<td>HVAC 230</td>
<td>HVAC 240</td>
</tr>
</tbody>
</table>
HOTEL-MOTEL/FOOD MANAGEMENT SPECIALIST
ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 10711 (Effective Fall 1997–Summer 2002)

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 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 students may find it necessary to complete specific coursework 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

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<td>CABS 110</td>
<td>Microsoft Office</td>
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<tr>
<td>HMFS 191</td>
<td>Introduction to Hospitality and Food Service Operations</td>
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<td>HMFS 131</td>
<td>Food and Beverage Management</td>
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<td>HMFS 196</td>
<td>Internship and Seminar</td>
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<td>HMFS 203</td>
<td>Hotel-Restaurant Law</td>
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<tr>
<td>HMFS 204</td>
<td>Human Relations/Supervisory Development</td>
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<td>HMFS 205</td>
<td>Hospitality Management</td>
<td>3</td>
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<tr>
<td>HMFS 207</td>
<td>Financial Control and Management I</td>
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<td>HMFS 215</td>
<td>Hospitality Sales/Marketing</td>
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<td>HMFS 232</td>
<td>Food and Labor Cost Control</td>
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</table>

LIMITED CHOICE REQUIREMENTS

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

CHOICE 1: General Education Core Areas
(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 |

12 Credits

CHOICE 2: Specialization
(Choose 1 Subchoice - See Note 1) 16-17 Credits

Subchoice 2A: Hotel-Motel Management Specialist

<table>
<thead>
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<td>Hotel and Restaurant Human Resource Management</td>
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<tr>
<td>HMFS 206</td>
<td>Front Office Management</td>
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<tr>
<td>HMFS 208</td>
<td>Financial Control and Management II</td>
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<tr>
<td>HMFS 214</td>
<td>Supervisory Housekeeping</td>
<td>2</td>
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<tr>
<td>HMFS 229</td>
<td>Convention and Meeting Management</td>
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<tr>
<td>TRVL 150</td>
<td>Tourist/Travel Operations</td>
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Subchoice 2B: Food Management Specialist

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<td>HMFS 110</td>
<td>Food Service Sanitation</td>
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<td>HMFS 132</td>
<td>Food Production</td>
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<td>HMFS 155</td>
<td>Quantity Food Purchasing</td>
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<tr>
<td>HMFS 170</td>
<td>Menu Design and Layout</td>
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<td>HMFS 254</td>
<td>Mixology</td>
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Subchoice 2C: Culinary Arts Specialist

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<th>CODE</th>
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<th>CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>HMFS 194</td>
<td>Nutrition</td>
<td>2</td>
</tr>
<tr>
<td>HMFS 197</td>
<td>Food Service Catering</td>
<td>4</td>
</tr>
<tr>
<td>HMFS 251</td>
<td>Wine Appreciation</td>
<td>1</td>
</tr>
<tr>
<td>HMFS 262</td>
<td>Gourmet Foreign Cookery</td>
<td>2</td>
</tr>
<tr>
<td>HMFS 275</td>
<td>Bakery Products</td>
<td>2</td>
</tr>
<tr>
<td>HMFS 280</td>
<td>Food Decorating Gourmet</td>
<td>3</td>
</tr>
<tr>
<td>HMFS 281</td>
<td>Soups and Sauce</td>
<td>3</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL 60

NOTES
1. Credit may be taken from Subchoice 2A, 2B, 2C, and/or departmentally approved HMFS electives. In addition, other departmentally approved recommended electives may be taken, not to exceed 3 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.

<table>
<thead>
<tr>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
</tr>
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<tbody>
<tr>
<td>CABS 110</td>
<td>HMFS 204</td>
<td>HMFS 190</td>
<td>HMFS 215</td>
</tr>
<tr>
<td>HMFS 101</td>
<td>HMFS 205</td>
<td>HMFS 203</td>
<td>HMFS 232</td>
</tr>
<tr>
<td>HMFS 191</td>
<td>Lim.Ch.</td>
<td>HMFS 207</td>
<td>Lim.Ch.</td>
</tr>
<tr>
<td>Lim.Ch.</td>
<td>Lim.Ch.</td>
<td>Lim.Ch.</td>
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</tr>
<tr>
<td>Lim.Ch.</td>
<td>Lim.Ch.</td>
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</tbody>
</table>
CHILD DEVELOPMENT
ASSOCIATE IN APPLIED SCIENCE

Curriculum Code: 10108 (Effective Fall 1997–Summer 2002)

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 day-time 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 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 students may find it necessary to complete specific coursework 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 175, telephone number (517) 485-1410.

REQUIREMENTS

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
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<tr>
<td>CODE</td>
<td>TITLE</td>
</tr>
<tr>
<td>CHDV 101</td>
<td>Child Growth and Development; 0-5 years</td>
</tr>
<tr>
<td>CHDV 111</td>
<td>Positive Guidance and Communication Skills with Children</td>
</tr>
<tr>
<td>CHDV 112</td>
<td>Building Relationships with Families in Child Care</td>
</tr>
<tr>
<td>CHDV 113</td>
<td>Health and Safety Issues in Child Care</td>
</tr>
<tr>
<td>CHDV 220</td>
<td>Curriculum and Learning Environments for Preschoolers</td>
</tr>
<tr>
<td>CHDV 221</td>
<td>Infant-Toddler Program: Development</td>
</tr>
<tr>
<td>CHDV 222</td>
<td>School-Age Child Care Program Development</td>
</tr>
<tr>
<td>CHDV 230</td>
<td>Child Care Center Administration</td>
</tr>
<tr>
<td>CHDV 281</td>
<td>Issues in Teaching in Child Care (See Note 1)</td>
</tr>
<tr>
<td>CHDV 282</td>
<td>Child Development Practicum (See Note 1)</td>
</tr>
<tr>
<td>ISCI 121</td>
<td>Integrated Science for Education I</td>
</tr>
<tr>
<td>SOCCL 120</td>
<td>Introduction to Sociology</td>
</tr>
<tr>
<td>WRIT 121</td>
<td>Composition I</td>
</tr>
<tr>
<td>WRIT 122</td>
<td>Composition II</td>
</tr>
</tbody>
</table>

LIMITED CHOICE REQUIREMENTS

<table>
<thead>
<tr>
<th>TOTAL: 22 CREDITS</th>
</tr>
</thead>
</table>

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

CHOICE 1: General Education Core Areas
(See the GENERAL EDUCATION section above) 3 Credits
- 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

CHOICE 2: Social Science (See Note 3) 4 Credits

CHOICE 3: Science/Mathematics (See Note 3) 4 Credits

CHOICE 4: Humanities (See Note 3) 6 Credits

CHOICE 5: Professional Related Courses (See Note 4) 3 Credits
- EMSB 102 CPR for Health Care Professionals .5
- EMSB 106 Infant/Child CPR .25
- HUSE 100 Introduction to Human Services: Resources and Interventions 3
- HUSE 110 Personal Dimensions of Human Services 2
- HUSE 119 Introduction to Child Abuse and Neglect 3
- HUSE 120 Introduction to Domestic Violence 2
- PSYC 185 Children and Death: Grief and Loss 2

MINIMUM TOTAL 65

NOTES

1. CHDV 281 and CHDV 282 must be taken concurrently with departmental approval. Applications must be submitted one semester in advance to be admitted to CHDV 281/282. Applications for departmental approval are available in the Human, Health and Public Services Careers Department, Room 175, Gannon Vocational-Technical Center.

2. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.

3. See the MACRAO Transfer Agreement in the Transfer Information section of this catalog for appropriate social science, science/mathematics, and humanities courses. ANAT 145 is strongly recommended as the science requirement.

4. Students may also choose from CHDV-1xxx courses not already used to meet degree requirements.

5. Each 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.
**Child Development**

**Certificate of Achievement**

Curriculum Code: 10133 (Effective Fall 1997–Summer 2002)

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.

**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 Human, Health and Public Service Careers Department, Gannon Vocational-Technical Center, Room 175, telephone number (517) 489-1410.

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>TOTAL: 31 CREDITS</th>
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<tbody>
<tr>
<td>CODE</td>
<td>TITLE</td>
</tr>
<tr>
<td>CHDV 101</td>
<td>Child Growth and Development: 0–5 years</td>
</tr>
<tr>
<td>CHDV 111</td>
<td>Positive Guidance and Communication Skills with Children</td>
</tr>
<tr>
<td>CHDV 112</td>
<td>Building Relationships with Families in Child Care</td>
</tr>
<tr>
<td>CHDV 113</td>
<td>Health and Safety Issues in Child Care</td>
</tr>
<tr>
<td>CHDV 220</td>
<td>Curriculum and Learning Environments for Preschoolers</td>
</tr>
<tr>
<td>CHDV 221</td>
<td>Infant-Toddler Program Development</td>
</tr>
<tr>
<td>CHDV 222</td>
<td>School-Age Child Care Program Development</td>
</tr>
<tr>
<td>CHDV 230</td>
<td>Child Care Center Administration</td>
</tr>
<tr>
<td>CHDV 281</td>
<td>Issues in Teaching in Child Care (See Note 1)</td>
</tr>
<tr>
<td>CHDV 282</td>
<td>Child Development Practicum (See Note 1)</td>
</tr>
<tr>
<td>WRIT 121</td>
<td>Composition I</td>
</tr>
</tbody>
</table>

**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 |
| EMBS 122 | CPR for Health Care Professionals | .5 |
| EMBS 106 | Infant/Child CPR | .25 |
| HUSE 100 | Introduction to Human Services: Resources and Interventions | 3 |
| HUSE 101 | Personal Dimensions of Human Services | 2 |
| HUSE 110 | Introduction to Child Abuse and Neglect | 3 |
| HUSE 120 | Introduction to Domestic Violence | 2 |
| PSYC 185 | Children and Death: Grief and Loss | 2 |

**Minimum Total**

34 CREDITS

**Notes**

1. CHDV 281 and CHDV 282 must be taken concurrently with departmental approval. Applications must be submitted one semester in advance to be admitted to CHDV 281/282. Applications for departmental approval are available in the Human, Health and Public Services Careers Department, Room 175, Gannon Vocational-Technical Center.

2. Students may also choose from CHDV-prefix courses not already used to meet degree requirements.

3. Each 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.

<table>
<thead>
<tr>
<th>CHDV 101</th>
<th>CHDV 112</th>
<th>CHDV 113</th>
</tr>
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<tbody>
<tr>
<td>CHDV 111</td>
<td>CHDV 220</td>
<td>CHDV 281</td>
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<tr>
<td>CHDV 221</td>
<td>CHDV 222</td>
<td>CHDV 282</td>
</tr>
<tr>
<td>Lim.Ch.</td>
<td>CHDV 230</td>
<td>WRIT 121</td>
</tr>
<tr>
<td>Lim.Ch.</td>
<td>Lim.Ch.</td>
<td>Lim.Ch.</td>
</tr>
</tbody>
</table>
# Human Services Careers

## Gerontology Associate in Applied Science

- **Curriculum Code:** 10171 (Effective Fall 1997–Summer 2002)

This curriculum focuses on the study of the process of aging and the older person's relationship with society. Individuals trained in gerontology help older adults cope with problems, identify the social services needs of older adults, assist older adults and their families to meet those needs, or assist with the health and wellness needs of older people. Completion of this program will assist in entry-level employment in related jobs, such as senior citizen activity leader, senior housing manager, senior services worker and outreach worker. Two consecutive semesters of field work in an agency serving older adults is completed during the final year of the program. Not all courses in this program are transferable 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 students may find it necessary to complete specific coursework in mathematics. Information on how to fulfill all general education requirements, see page 22.

### Information

Contact the Human, Health and Public Service Careers Department, Gamma Vocational-Technical Center, Room 175, Telephone number (517) 493-1416.

### Requirements

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>ANAT 145</td>
<td>Introductory Anatomy and Physiology</td>
<td>4</td>
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<tr>
<td>GERO 100</td>
<td>Introduction to Human Aging</td>
<td>3</td>
</tr>
<tr>
<td>GERO 101</td>
<td>Programs and Services for the Aging</td>
<td>3</td>
</tr>
<tr>
<td>GERO 202</td>
<td>Mental Health and Aging</td>
<td>2</td>
</tr>
<tr>
<td>GERO 204</td>
<td>Aging and Health</td>
<td>2</td>
</tr>
<tr>
<td>GERO 282</td>
<td>Gerontology Field Placement I (See Note 1)</td>
<td>4</td>
</tr>
<tr>
<td>GERO 284</td>
<td>Gerontology Field Placement II (See Note 1)</td>
<td>4</td>
</tr>
<tr>
<td>HUSE 100</td>
<td>Introduction to Human Services: Resources and Interventions</td>
<td>2</td>
</tr>
<tr>
<td>HUSE 101</td>
<td>Personal Dimensions of Human Services</td>
<td>2</td>
</tr>
<tr>
<td>SOCL 120</td>
<td>Introduction to Sociocultural Patterns</td>
<td>4</td>
</tr>
<tr>
<td>SOWK 203</td>
<td>Social Work Interview: Concepts and Skill Practice</td>
<td>3</td>
</tr>
<tr>
<td>SPCH 120</td>
<td>Communications: Speech and Language</td>
<td>3</td>
</tr>
<tr>
<td>WRIT 121</td>
<td>Composition I</td>
<td>4</td>
</tr>
<tr>
<td>WRIT 122</td>
<td>Composition II</td>
<td>4</td>
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</tbody>
</table>

### Limited Choice Requirements

Complete the indicated number of credits from each choice listed below.

#### Choice 1: General Education Core Areas

<table>
<thead>
<tr>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>Writing Core Area (See Note 2)</td>
<td>6</td>
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<tr>
<td>Speech Communication Core Area (See Note 2)</td>
<td>2</td>
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<tr>
<td>Science/Technology Core Area (See Note 3)</td>
<td>8</td>
</tr>
<tr>
<td>Global Perspectives and Diversity Core Area (See Note 2)</td>
<td>4</td>
</tr>
</tbody>
</table>

#### Choice 2: Social Science

<table>
<thead>
<tr>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>POLS 120: American Political System</td>
<td>4</td>
</tr>
<tr>
<td>POLS 121: State and Local Government</td>
<td>4</td>
</tr>
<tr>
<td>PSYC 200: Introduction to Psychology</td>
<td>4</td>
</tr>
</tbody>
</table>

#### Choice 3: Humanities (See Note 4)

<table>
<thead>
<tr>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Humanities</td>
<td>8</td>
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</tbody>
</table>

#### Choice 4: Professional Related Courses (See Note 5)

<table>
<thead>
<tr>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional Related Courses</td>
<td>3</td>
</tr>
</tbody>
</table>

### Minimum Total

**64**

### Notes

1. There is an application process and guidelines for admission into field placement. Applications are due by April 1 for admission to Fall field placement. Application packets with current requirements are available from the Human, Health and Public Service Careers Department, 175 GVT. Students should contact a program advisor for further information.

2. Students completing the requirements have fulfilled the requirements for the Gerontology Associate in Applied Science degree.

3. Students should select a course that also meets MACRAO. See the MACRAO Transfer Agreement in the "Transfer Information" section of this catalog.

4. See the MACRAO Transfer Agreement in the "Transfer Information" section of this catalog for appropriate humanities courses.

5. Students may choose from any GERO-prefix courses numbered GERO 128-199.

6. Each required HUSE, SOWK and GERO 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.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>GERO 100</td>
<td>GERO 101</td>
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<tr>
<td>GERO 204</td>
<td>GERO 202</td>
<td>3</td>
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<tr>
<td>HUSE 100</td>
<td>SOWK 203</td>
<td>3</td>
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<tr>
<td>HUSE 101</td>
<td>SPCH 120</td>
<td>3</td>
</tr>
<tr>
<td>WRIT 121</td>
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<thead>
<tr>
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<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HUSE 100</td>
<td>SOWK 203</td>
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</table>

### Gerontology Certificate of Achievement

- **Curriculum Code:** 10152 (Effective Fall 1997–Summer 2002)

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. It includes two semesters of field placement.

### Requirements

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GERO 100</td>
<td>Introduction to Human Aging</td>
<td>3</td>
</tr>
<tr>
<td>GERO 101</td>
<td>Programs and Services for the Aging</td>
<td>3</td>
</tr>
<tr>
<td>GERO 202</td>
<td>Mental Health and Aging</td>
<td>2</td>
</tr>
<tr>
<td>GERO 204</td>
<td>Aging and Health</td>
<td>2</td>
</tr>
<tr>
<td>GERO 282</td>
<td>Gerontology Field Placement I (See Note 1)</td>
<td>4</td>
</tr>
<tr>
<td>GERO 284</td>
<td>Gerontology Field Placement II (See Note 1)</td>
<td>4</td>
</tr>
<tr>
<td>HUSE 100</td>
<td>Introduction to Human Services: Resources and Interventions</td>
<td>3</td>
</tr>
<tr>
<td>HUSE 101</td>
<td>Personal Dimensions of Human Services</td>
<td>2</td>
</tr>
<tr>
<td>SOWK 203</td>
<td>Social Work Interview: Concepts and Skill Practice</td>
<td>3</td>
</tr>
<tr>
<td>WRIT 121</td>
<td>Composition I</td>
<td>4</td>
</tr>
</tbody>
</table>

### Limited Choice Requirements

Complete the indicated number of credits from each choice listed below.

#### Choice 1: Professional Related Courses (See Note 2)

<table>
<thead>
<tr>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional Related Courses</td>
<td>3</td>
</tr>
</tbody>
</table>

### Minimum Total

**33**

### Notes

1. There is an application process and guidelines for admission into field placement. Field placement applications are due by April 1 for admission to Fall field placement. Application packets with current requirements are available from the Human, Health and Public Service Careers Department, 175 GVT. See a program advisor for further information.

2. Students may choose from any GERO-prefix courses numbered GERO 128-199.

3. Each required HUSE, SOWK and GERO course must be completed with a minimum 2.0 grade or better.

### Suggested Course Sequence

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GERO 100</td>
<td>GERO 101</td>
<td>3</td>
</tr>
<tr>
<td>GERO 204</td>
<td>WRIT 121</td>
<td>3</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HUSE 100</td>
<td>SOWK 203</td>
<td>3</td>
</tr>
<tr>
<td>HUSE 101</td>
<td></td>
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</tr>
</tbody>
</table>
**HUMAN SERVICES, GENERAL ASSOCIATE IN APPLIED SCIENCE**

Curriculum Code: 10228 (Effective Fall 1997–Summer 2002)

Human services worker is a generic term for an individual who works in various social service agencies assisting professional staff, such as social workers and psychologists, to meet human needs, including helping clients obtain services, monitoring and keeping records, organizing or leading group activities, assisting clients in mastering everyday living skills, and overseeing adult group home residents. Job titles and duties vary according to the setting and type of clients served.

Two semesters of field experience in a Human Services Agency is completed during the last year of the 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 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 students may find it necessary to complete specific coursework 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 175, telephone number (517) 483-1410.

**REQUIREMENTS**

**TOTAL: 41 CREDITS**

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<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
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<td>ANAT 145</td>
<td>Introductory Anatomy and Physiology</td>
<td>4</td>
</tr>
<tr>
<td>HUSE 103</td>
<td>Introduction to Human Services: Resources and Interventions</td>
<td>3</td>
</tr>
<tr>
<td>HUSE 101</td>
<td>Personal Dimensions of Human Services</td>
<td>2</td>
</tr>
<tr>
<td>HUSE 282</td>
<td>Human Services Practicum I: Organizational Systems (See Note 1)</td>
<td>4</td>
</tr>
<tr>
<td>HUSE 284</td>
<td>Human Services Practicum II: Service Delivery Skills (See Note 1)</td>
<td>4</td>
</tr>
<tr>
<td>SOC 120</td>
<td>Introduction to Sociology</td>
<td>4</td>
</tr>
<tr>
<td>SOC 254</td>
<td>Marriage and Family</td>
<td>3</td>
</tr>
<tr>
<td>SOC 260</td>
<td>Minority Groups</td>
<td>3</td>
</tr>
<tr>
<td>SOWK 233</td>
<td>Social Work Interviewing: Concepts and Skill Practice</td>
<td>3</td>
</tr>
<tr>
<td>SPCH 120</td>
<td>Dynamics of Communication</td>
<td>3</td>
</tr>
<tr>
<td>WRIT 121</td>
<td>Composition I</td>
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</tr>
<tr>
<td>WRIT 122</td>
<td>Composition II</td>
<td>4</td>
</tr>
</tbody>
</table>

**LIMITED CHOICE REQUIREMENTS**

**TOTAL: 22 CREDITS**

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

**CHOICE 1: General Education Core Areas**

(See the GENERAL EDUCATION section above)

**3 Credits**

- Writing Core Area (See Note 2)
- Speech Communication Core Area (See Note 2)
- Science/Technology Core Area (See Note 3)
- Global Perspectives and Diversity Core Area (See Note 2)

**CHOICE 2: Social Science**

- POLS 120 | American Political System                  | 4            |
- POLS 121 | State and Local Government                  | 4            |
- PSYC 200 | Introduction to Psychology                  | 4            |

**CHOICE 3: Humanities (See Note 4)**

**8 Credits**

**MINIMUM TOTAL**

83

**NOTES**

1. There is an application process and guidelines for admission into the field placement component. Applications are due by April 1 for admission to Fall field placement. Application packets with current requirements are available from the Human, Health and Public Service Careers Department, 175 GVT. See a program advisor for further information.

2. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.

3. Students should select a course that also meets MACRAO. See the MACRAO Transfer Agreement in the “Transfer Information” section of this catalog.

4. See the MACRAO Transfer Agreement in the “Transfer Information” section of this catalog for appropriate humanities courses.

5. Students may also choose from any GER0-prefix courses and/or any HUSE-prefix courses (except HUSE 286 and HUSE 288), not already used to meet degree requirements.

6. Each required HUSE and SOWK 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.

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<tr>
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<tr>
<td>HUSE 100</td>
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<td>Lim.Ch.2</td>
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<td>Lim.Ch.4</td>
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</table>
## SUBSTANCE ABUSE
### ASSOCIATE IN APPLIED SCIENCE

Curriculum Code: 10220 (Effective Fall 1997–Summer 2002)

Substance Abuse workers with an associate degree assist social workers or psychologists in agencies focusing on substance abuse. Graduates may be employed in private clinics, public or community agencies, or work-site programs specializing in substance abuse treatment and prevention. Additional education is needed for advanced positions. Individuals wishing to do counseling should be certified as a certified addictions counselor through the Michigan Office of Substance Abuse Services. Two semesters of field work in a substance abuse agency are included in the 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 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 students may find it necessary to complete specific coursework 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 175, telephone number (517) 483-1410.

### REQUIREMENTS

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<td>Introduction to Human Services: Resources and Interventions</td>
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<td>HUSE 101</td>
<td>Personal Dimensions of Human Services</td>
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<td>HUSE 112</td>
<td>Introduction to Substance Abuse</td>
</tr>
<tr>
<td>HUSE 240</td>
<td>Substance Abuse: Special Populations &amp; Adolescent Addiction</td>
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<td>HUSE 241</td>
<td>Substance Abuse Prevention and Intervention</td>
</tr>
<tr>
<td>HUSE 242</td>
<td>The Chemically Dependent Family</td>
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<tr>
<td>HUSE 244</td>
<td>Substance Abuse Agencies, Treatment, Addiction Patterns</td>
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<tr>
<td>HUSE 286</td>
<td>Substance Abuse Practicum I:Organizational Systems</td>
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<tr>
<td>HUSE 288</td>
<td>Substance Abuse Practicum II:Service Delivery Skills (See Note 1)</td>
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<tr>
<td>SOCL 120</td>
<td>Introduction to Sociology</td>
</tr>
<tr>
<td>SOWK 205</td>
<td>Social Work Interviewing: Concepts and Skill Practice</td>
</tr>
<tr>
<td>SPCH 120</td>
<td>Dynamics of Communication</td>
</tr>
<tr>
<td>WRIT 121</td>
<td>Composition I</td>
</tr>
<tr>
<td>WRIT 122</td>
<td>Composition II</td>
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### LIMITED CHOICE REQUIREMENTS

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<td>CHOICE 1:</td>
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<td>Writing Core Area (See Note 2)</td>
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<td>CHOICE 2:</td>
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<tr>
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<td>4 Credits</td>
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<td>American Political System</td>
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<td>POLS 121</td>
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<td>PSYC 200</td>
<td>Introduction to Psychology</td>
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<td>CHOICE 3:</td>
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</tr>
<tr>
<td>Humanities (See Note 4)</td>
<td>8 Credits</td>
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### NOTES

1. There is an application process and guidelines for admission into the field placement component. Applications are due by April 1 for admission to Fall field placement. Application packets with current requirements are available from the Human, Health and Public Service Careers Department, Room 175 Gannon Vocational-Technical Center. See a program advisor for further information.

2. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.

3. Students should select a course that also meets MACRAO. See the MACRAO Transfer Agreement in the Transfer Information section of this catalog.

4. See the MACRAO Transfer Agreement for appropriate humanities courses.

5. Each required HUSE and SOWK course must be completed with a minimum 2.0 grade or better.

6. 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.

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<td>HUSE 101</td>
<td>HUSE 244</td>
<td>SOCL 120</td>
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<td>HUSE 240</td>
<td>SOWK 203</td>
<td>Lim.Ch.1</td>
<td>Lim.Ch.3</td>
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<tr>
<td>HUSE 288</td>
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<td></td>
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<tr>
<td>Lim.Ch.3</td>
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</table>
**SUBSTANCE ABUSE CERTIFICATE OF ACHIEVEMENT**

Curriculum Code: 10239 (Effective Fall 1997-Summer 2002)

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 with prior degrees. Two semesters of field work are required.

**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 Human, Health and Public Service Careers Department, Gannon Vocational-Technical Center, Room 175, telephone number (517) 483-1410.

<table>
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<td>The Chemically Dependent Family</td>
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<td>Substance Abuse Agencies, Treatment, Addiction Patterns</td>
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<td>Substance Abuse Practicum I:Organizational Systems (See Note 1)</td>
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<td>Substance Abuse Practicum II:Service Delivery Skills (See Note 1)</td>
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<td>Social Work Interviewing: Concepts and Skill Practice</td>
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<tr>
<td>WRIT 121</td>
<td>Composition I</td>
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</table>

**MINIMUM TOTAL**

35

**NOTES**

1. There is an application process and guidelines for admission into the field placement component. Applications are due by April 1 for admission to Fall field placement. Application packets with current requirements are available from the Human, Health and Public Service Careers Department, Room 175 Gannon Vocational-Technical Center. See a program advisor for further information.

2. Each required HUSE and SOWK course must be completed with a minimum 2.0 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.

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<td>HUSE 101</td>
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LANSING COMMUNITY COLLEGE CATALOG 1997-98 117
COMPUTERIZED NUMERICAL CONTROL PROGRAMMER
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 1026 (Effective Fall 1997–Summer 2002)

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 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 students may find it necessary to complete specific coursework 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 223, telephone number (517) 483-1338.

REQUIREMENTS

TOTAL: 58 CREDITS

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<tr>
<td>CNCP 110</td>
<td>Foundations of CNC Programming</td>
<td>4</td>
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<tr>
<td>CNCP 130</td>
<td>Machine Controls and Set-up</td>
<td>4</td>
</tr>
<tr>
<td>CNCP 200</td>
<td>Unigraphics NC</td>
<td>4</td>
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<tr>
<td>CNCP 210</td>
<td>SMART-CAM</td>
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<tr>
<td>CNCP 215</td>
<td>CAMANO</td>
<td>4</td>
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<tr>
<td>DTDS 150</td>
<td>Unigraphics I</td>
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</tr>
<tr>
<td>MACH 110</td>
<td>Machine Tool Technology I (See Note 1)</td>
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<tr>
<td>MACH 111</td>
<td>Machine Tool Technology II</td>
<td>4</td>
</tr>
<tr>
<td>MACH 123</td>
<td>Effective Use of Machinery's Handbook</td>
<td>4</td>
</tr>
<tr>
<td>MACH 135</td>
<td>Metallurgy and Heat Treat</td>
<td>4</td>
</tr>
<tr>
<td>MACH 140</td>
<td>Tooling Theory and Practices</td>
<td>4</td>
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<tr>
<td>MATH 114</td>
<td>Technical Math I</td>
<td>4</td>
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<td>MATH 115</td>
<td>Technical Math II</td>
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<tr>
<td>WRIT 124</td>
<td>Technical Writing</td>
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LIMITED CHOICE REQUIREMENTS

TOTAL: 12–13 CREDITS

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

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

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<td>Global Perspectives and Diversity Core Area</td>
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CHOICE 2: Drafting Technology

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</tr>
<tr>
<td>DTDS 104</td>
<td>Descriptive Geometry</td>
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<td>DTDS 110</td>
<td>Industrial Blueprint Reading</td>
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<tr>
<td>DTDS 131</td>
<td>AutoCAD Basic 2-D</td>
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MINIMUM TOTAL: 70

NOTES
1. If students have prior experience in machining, they should see an academic advisor in the Technology Careers Department to see if the preparation for MACH 105 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.

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<tr>
<th>CRD</th>
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<td>WRIT 124</td>
<td>MACH 140</td>
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INDUSTRIAL TECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 10110 (Effective Fall 1997--Summer 2002)

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 Class Schedule for course prerequisite information. Basic skills assessment and advising information may be found on page 6 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 students may find it necessary to complete specific coursework 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 229, telephone number (517) 493-1336.

REQUIREMENTS

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<td>Drafting I</td>
<td></td>
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<tr>
<td>DTDS 110</td>
<td>Industrial Blueprint Reading</td>
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<td>EMTA 103</td>
<td>Medical First Responder</td>
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<td>HVAC 110</td>
<td>Applied Electricity I</td>
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<td>MACH 100</td>
<td>Manufacturing Processes</td>
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<td>Machine Tool Survey</td>
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<td>MATH 115</td>
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<td>Technical Writing</td>
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LIMITED CHOICE REQUIREMENTS

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

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</tr>
<tr>
<td>Global Perspectives and Diversity Core Area</td>
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<table>
<thead>
<tr>
<th>CHOICE 2: Technical Related</th>
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<td>CNCP 101 PC Applications for Technology</td>
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<td>MACH 140 Tooling Theory and Practices</td>
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<td>MACH 210 Principles of Electric Discharge Machining (EDM)</td>
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<td>QUAL 121 Introduction to Statistical Process Control</td>
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MINIMUM TOTAL: 67

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.

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INDUSTRIAL TECHNOLOGY
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 10150 (Effective Fall 1997--Summer 2002)

This certificate provides students with a basic understanding of a variety of technologies to enhance the theory skills they already possess.

REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>TOTAL CREDITS</th>
<th>CREDIT HOURS</th>
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</thead>
<tbody>
<tr>
<td>DTDS 110</td>
<td>Industrial Blueprint Reading</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>EMTA 100</td>
<td>Medical First Responder</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>MACH 100</td>
<td>Manufacturing Processes</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>MACH 105</td>
<td>Machine Tool Survey</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>MACH 120</td>
<td>Effective Use of Machinery's Handbook</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>MACH 135</td>
<td>Metallurgy and Heat Treat</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>MATH 114</td>
<td>Technical Math I</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>MFGM 101</td>
<td>Industrial Hydraulics</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>MFGM 110</td>
<td>Machine Maintenance I</td>
<td></td>
<td>4</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL: 33

SUGGESTED COURSE SEQUENCE

<table>
<thead>
<tr>
<th>I</th>
<th>II</th>
<th>III</th>
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<tr>
<td>DTDS 110</td>
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<tr>
<td>MACH 100</td>
<td>MACH 105</td>
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<td>MATH 114</td>
<td>MACH 120</td>
<td></td>
</tr>
<tr>
<td>MFGM 101</td>
<td>MACH 135</td>
<td>MFGM 110</td>
</tr>
</tbody>
</table>
MACHINE MAINTENANCE
ASSOCIATE IN APPLIED SCIENCE DEGREE
Curriculum Code: 10173 (Effective Fall 1997–Summer 2002)

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 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 students may find it necessary to complete specific coursework 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 220, telephone number (517) 483-1336.

REQUIREMENTS

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<td>EMTA 106</td>
<td>Medical First Responder</td>
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<td>MACH 110</td>
<td>Machine Tool Technology I (See Note 1)</td>
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<td>MACH 111</td>
<td>Machine Tool Technology II</td>
<td>4</td>
</tr>
<tr>
<td>MACH 120</td>
<td>Effective Use of Machinery's Handbook</td>
<td>4</td>
</tr>
<tr>
<td>MACH 135</td>
<td>Metallurgy and Heat Treat</td>
<td>4</td>
</tr>
<tr>
<td>MFGM 101</td>
<td>Industrial Hydraulics</td>
<td>4</td>
</tr>
<tr>
<td>MFGM 110</td>
<td>Machine Maintenance I</td>
<td>4</td>
</tr>
<tr>
<td>MFGM 111</td>
<td>Machine Maintenance II</td>
<td>4</td>
</tr>
<tr>
<td>MFGM 120</td>
<td>Industrial Presses</td>
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<td>MFGM 125</td>
<td>Hipping</td>
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<td>WRIT 124</td>
<td>Technical Writing</td>
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LIMITED CHOICE REQUIREMENTS

| TOTAL: 22–24 CREDITS |

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

CHOICE 1: General Education Core Areas

(See the GENERAL EDUCATION section above)

<table>
<thead>
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<tr>
<td>Writing Core Area (See Note 2)</td>
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<tr>
<td>Science/Technology Core Area</td>
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<tr>
<td>Global Perspectives and Diversity Core Area</td>
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CHOICE 2: Electrical Technology

<table>
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<tr>
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<tbody>
<tr>
<td>ELTE 110</td>
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<td>HVAC 110</td>
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CHOICE 3: Technical Related

<table>
<thead>
<tr>
<th>3–4 Credits</th>
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</thead>
<tbody>
<tr>
<td>MACH 100</td>
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<tr>
<td>MACH 140</td>
</tr>
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<td>MFGM 102</td>
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<td>WELD 100</td>
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</table>

CHOICE 4: Mathematics & Physics

<table>
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<tr>
<th>8 Credits</th>
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<tbody>
<tr>
<td>MATH 114</td>
</tr>
<tr>
<td>MATH 115</td>
</tr>
<tr>
<td>PHYS 200</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL

| 69 |

NOTES
1. If students have prior experience in machining, they should see an academic advisor in the Technology Careers Department to see if the prerequisite for MACH 110 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.

<table>
<thead>
<tr>
<th>I</th>
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<th>III</th>
<th>IV</th>
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<tbody>
<tr>
<td>MFGM 101</td>
<td>DTDS 101</td>
<td>DTDS 110</td>
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<td>WRIT 124</td>
<td>MACH 110</td>
<td>EMTA 100</td>
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<td>MACH 120</td>
<td>MACH 111</td>
<td>MFGM 125</td>
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<td>Lim.Ch.</td>
<td>MFGM 110</td>
<td>MACH 135</td>
<td>Lim.Ch.</td>
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<td>Lim.Ch.</td>
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MACHINE REPAIR
CERTIFICATE OF ACHIEVEMENT
Curriculum Code: 10147 (Effective Fall 1997–Summer 2002)

This program provides technical knowledge and skills in the adjustment, maintenance, repair of tools, equipment, and machines. It prepares an individual for an entry-level position.

REQUIREMENTS

| TOTAL: 31 CREDITS |

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

<table>
<thead>
<tr>
<th>31</th>
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<tbody>
<tr>
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<td>MATH 114</td>
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<tr>
<td>MFGM 101</td>
</tr>
<tr>
<td>MFGM 110</td>
</tr>
<tr>
<td>MFGM 111</td>
</tr>
<tr>
<td>MFGM 125</td>
</tr>
<tr>
<td>WELD 100</td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>I</th>
<th>II</th>
</tr>
</thead>
<tbody>
<tr>
<td>DTDS 110</td>
<td>EMTA 100</td>
</tr>
<tr>
<td>MACH 105</td>
<td>MFGM 101</td>
</tr>
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<td>MFGM 111</td>
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<tr>
<td>MFGM 110</td>
<td>WELD 100</td>
</tr>
<tr>
<td>MFGM 125</td>
<td></td>
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</tbody>
</table>
MILLWRIGHT
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 10154 (Effective Fall 1997–Summer 2002)

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 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 220, telephone number (517) 485-1335.

REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
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<td>BLDT 103</td>
<td>Structural Blueprint Reading</td>
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<td>EMFA 100</td>
<td>Medical First Responder</td>
<td>3</td>
</tr>
<tr>
<td>MACH 105</td>
<td>Machine Tool Survey</td>
<td>3</td>
</tr>
<tr>
<td>MACH 105</td>
<td>Metallurgy and Heat Treat</td>
<td>4</td>
</tr>
<tr>
<td>MATH 114</td>
<td>Technical Math I</td>
<td>4</td>
</tr>
<tr>
<td>MFGM 101</td>
<td>Industrial Hydraulics</td>
<td>4</td>
</tr>
<tr>
<td>MFGM 110</td>
<td>Machine Maintenance I</td>
<td>4</td>
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<tr>
<td>MFGM 111</td>
<td>Machine Maintenance II</td>
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</tr>
<tr>
<td>MFGM 125</td>
<td>Rigging</td>
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</table>

LIMITED CHOICE REQUIREMENTS

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

<table>
<thead>
<tr>
<th>CHOICE 1: Building Related</th>
<th>3–4 Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BLDT 100</td>
<td>Introduction to Construction</td>
</tr>
<tr>
<td>BLDT 121</td>
<td>Residential Framing and Foundations</td>
</tr>
<tr>
<td>CIVL 120</td>
<td>Surveying</td>
</tr>
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</table>

MINIMUM TOTAL

| MINIMUM TOTAL | 35 |

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.

<table>
<thead>
<tr>
<th>C</th>
<th>C</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMFA 100</td>
<td>BLDT 103</td>
<td>MFGM 111</td>
</tr>
<tr>
<td>MACH 105</td>
<td>MACH 135</td>
<td>Lim.Ch.</td>
</tr>
<tr>
<td>MATH 114</td>
<td>MFGM 110</td>
<td></td>
</tr>
<tr>
<td>MFGM 101</td>
<td>MFGM 125</td>
<td></td>
</tr>
</tbody>
</table>
MACHINIST TOOLMAKER
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 1019 (Effective Fall 1997–Summer 2002)

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 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 students may find it necessary to complete specific coursework 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 220, telephone number (517) 465-1336.

REQUIREMENTS

<table>
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<tr>
<th>CODE</th>
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<tr>
<td>CNCP 101</td>
<td>PC Applications for Technology</td>
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<tr>
<td>CNCP 110</td>
<td>Foundations of CNC Programming</td>
<td>3</td>
</tr>
<tr>
<td>DTDS 101</td>
<td>Drafting I</td>
<td>4</td>
</tr>
<tr>
<td>DTDS 110</td>
<td>Industrial Blueprint Reading</td>
<td>3</td>
</tr>
<tr>
<td>EMTA 100</td>
<td>Medical First Responder</td>
<td>3</td>
</tr>
<tr>
<td>MACH 110</td>
<td>Machine Tool Technology I (See Note 1)</td>
<td>4</td>
</tr>
<tr>
<td>MACH 111</td>
<td>Machine Tool Technology II</td>
<td>4</td>
</tr>
<tr>
<td>MACH 112</td>
<td>Machine Tool Technology III</td>
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<tr>
<td>MACH 120</td>
<td>Effective Use of Machinery’s Handbook</td>
<td>4</td>
</tr>
<tr>
<td>MACH 130</td>
<td>Die Construction</td>
<td>4</td>
</tr>
<tr>
<td>MACH 135</td>
<td>Matalurgy and Heat Treat</td>
<td>4</td>
</tr>
<tr>
<td>MACH 140</td>
<td>Tooling Theory and Practices</td>
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<tr>
<td>MACH 210</td>
<td>Principles of Electric Discharge Machining (EDM)</td>
<td>4</td>
</tr>
<tr>
<td>WRIT 124</td>
<td>Technical Writing</td>
<td>3</td>
</tr>
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</table>

LIMITED CHOICE REQUIREMENTS

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 (See Note 2) 0
Speech Communication Core Area 3
Science Technology Core Area 3
Global Perspectives and Diversity Core Area 3

**CHOICE 2:** Mathematics & Physics
12 Credits
MATH 114 Technical Math I 4
MATH 115 Technical Math II 4
MATH 116 Technical Math III 4
PHYS 200 Applied Physics 4

MINIMUM TOTAL 73

NOTES
1. If students have prior experience in machining, they should see an academic advisor in the Technology Careers Department to see if the prerequisite for MACH 110 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.

<table>
<thead>
<tr>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
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</thead>
<tbody>
<tr>
<td>DTDS 101</td>
<td>DTDS 110</td>
<td>CNCP 101</td>
<td>CNCP 110</td>
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<td>EMTA 100</td>
<td>MACH 110</td>
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<td>MACH 112</td>
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<td>MACH 120</td>
<td>MACH 135</td>
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<td>WRIT 124</td>
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TOOL AND DIE MAKER
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 10141 (Effective Fall 1997–Summer 2002)

This program provides technical knowledge and skills to operate machine tools used in the forming of metal components, as well as fabrication of special tools, dies, jigs, and fixtures used in cutting, forming, and finishing metal components. It prepares an individual for an entry-level position.

REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
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<tbody>
<tr>
<td>DTDS 110</td>
<td>Industrial Blueprint Reading</td>
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<td>EMTA 100</td>
<td>Medical First Responder</td>
<td>3</td>
</tr>
<tr>
<td>MACH 110</td>
<td>Machine Tool Technology I (See Note 1)</td>
<td>4</td>
</tr>
<tr>
<td>MACH 111</td>
<td>Machine Tool Technology II</td>
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<tr>
<td>MACH 120</td>
<td>Effective Use of Machinery’s Handbook</td>
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<tr>
<td>MACH 135</td>
<td>Matalurgy and Heat Treat</td>
<td>4</td>
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<tr>
<td>MACH 140</td>
<td>Tooling Theory and Practices</td>
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</tr>
<tr>
<td>MATH 114</td>
<td>Technical Math I</td>
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</table>

MINIMUM TOTAL 34

NOTES
1. If students have prior experience in machining, they should see an academic advisor in the Technology Careers Department to see if the prerequisite for MACH 110 can be waived.

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.

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<thead>
<tr>
<th>I</th>
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</tr>
</thead>
<tbody>
<tr>
<td>DTDS 110</td>
<td>EMTA 100</td>
<td>MACH 112</td>
</tr>
<tr>
<td>MACH 110</td>
<td>MACH 111</td>
<td>MACH 140</td>
</tr>
<tr>
<td>MACH 120</td>
<td>MACH 135</td>
<td>MATH 114</td>
</tr>
</tbody>
</table>

122 • LANSING COMMUNITY COLLEGE CATALOG 1997–98
WELDING TECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 10166 (Effective Fall 1997–Summer 2002)

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 crafts-person 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 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 students may find it necessary to complete specific coursework 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 220, telephone number (517) 483-1336.

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
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<td>CREDIT HOURS</td>
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<tr>
<td>EMTA 100 Medical First Responder</td>
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</tr>
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<td>MACH 105 Machine Tool Survey</td>
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</tr>
<tr>
<td>MACH 135 Metallurgy and Heat Treat</td>
<td>4</td>
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<tr>
<td>MFGM 125 Rigging</td>
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<tr>
<td>WELD 100 Combination Welding</td>
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<tr>
<td>WELD 151 Advanced Arc Welding</td>
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<tr>
<td>WELD 110 Gas Metal Arc Welding</td>
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<td>WELD 111 Gas Tungsten Arc Welding</td>
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<tr>
<td>WELD 120 Structural Fabrication and Inspection</td>
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<td>WELD 125 Structural Fabrication and Inspection</td>
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<tr>
<td>WELD 201 Tool and Die Welding</td>
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<td>WELD 205 Pipe Welding</td>
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<tr>
<td>WRIT 124 Technical Writing</td>
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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 |

| CHOICE 2: Technical Related | 5–7 Credits |
| ELTE 110 Practical Electricity | 3 |
| MACH 100 Manufacturing Processes | 4 |
| MFGM 102 Industrial Pneumatics | 3 |

MINIMUM TOTAL

60

NOTES

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.

<table>
<thead>
<tr>
<th>MACH 105</th>
<th>MACH 135</th>
<th>WELD 111</th>
<th>EMTA 100</th>
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<tbody>
<tr>
<td>MFGM 125</td>
<td>WELD 101</td>
<td>WELD 120</td>
<td>WELD 201</td>
</tr>
<tr>
<td>WELD 100</td>
<td>WELD 110</td>
<td>WELD 125</td>
<td>WELD 205</td>
</tr>
<tr>
<td>Lim. Ch.</td>
<td>WRIT 124</td>
<td>Lim. Ch.</td>
<td>Lim. Ch.</td>
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</table>

WELDING TECHNOLOGY
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 10166 (Effective Fall 1997–Summer 2002)

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.

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>TOTAL: 31 CREDITS</th>
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<tbody>
<tr>
<td>CREDITS TITLE</td>
<td>CREDIT HOURS</td>
</tr>
<tr>
<td>EMTA 100 Medical First Responder</td>
<td>3</td>
</tr>
<tr>
<td>MACH 135 Metallurgy and Heat Treat</td>
<td>4</td>
</tr>
<tr>
<td>MFGM 125 Rigging</td>
<td>2</td>
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<tr>
<td>WELD 100 Combination Welding</td>
<td>4</td>
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<tr>
<td>WELD 101 Advanced Arc Welding</td>
<td>4</td>
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<tr>
<td>WELD 110 Gas Metal Arc Welding</td>
<td>4</td>
</tr>
<tr>
<td>WELD 111 Gas Tungsten Arc Welding</td>
<td>4</td>
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<tr>
<td>WELD 120 Structural Fabrication and Inspection</td>
<td>4</td>
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<tr>
<td>WELD 125 Structural Blueprint Reading for Welders</td>
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</table>

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.

<table>
<thead>
<tr>
<th>EMTA 100</th>
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<tr>
<td>MFGM 125</td>
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LANSING COMMUNITY COLLEGE CATALOG 1997–98 123
INTERIOR DESIGN ASSISTANT, PRE-PROFESSIONAL ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 10867 (Effective Fall 1997–Summer 2002)

Interior design assistants 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 assistants 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 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 students may find it necessary to complete specific coursework 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 220, telephone number (517) 483-1336.

REQUIREMENTS

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<tr>
<th>REQUIREMENTS</th>
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<tr>
<td>INTR 110 Applied Design, Two Dimensional and Color</td>
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<tr>
<td>INTR 151 Computer Aided Kitchen Design</td>
<td>3</td>
<td></td>
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<tr>
<td>INTR 170 Introduction to Interiors</td>
<td>3</td>
<td></td>
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<tr>
<td>INTR 175 Space Planning and Design Process</td>
<td>3</td>
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<tr>
<td>INTR 198 Materials for Interiors</td>
<td>3</td>
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<tr>
<td>INTR 222 Computer Aided Drafting and Design for Interiors</td>
<td>3</td>
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<tr>
<td>INTR 225 Computer Aided Design for Space Planning</td>
<td>3</td>
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<tr>
<td>INTR 232 Twentieth Century Interior Design</td>
<td>3</td>
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<tr>
<td>INTR 240 Interior Lighting</td>
<td>3</td>
<td></td>
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<tr>
<td>INTR 244 Residential Interiors</td>
<td>4</td>
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<tr>
<td>INTR 248 Non-Residential Interiors, Systems Furniture</td>
<td>4</td>
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<tr>
<td>INTR 256 Interior Design Project Management</td>
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LIMITED CHOICE REQUIREMENTS

| 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 |

| CHOICE 2: History | 3 Credits |
| ARCH 141 Architectural History I | 3 |
| ARCH 142 Architectural History II | 3 |
| INTR 230 World Decorative Arts | 3 |
| INTR 231 Interior Design Period Research | 3 |

| CHOICE 3: Visual Communications | 2-3 Credits |
| ARCH 121 Visual Communication I | 3 |
| ARCH 122 Visual Communication II | 3 |
| INTR 132 Design Presentation Techniques | 3 |
| INTR 270 Design Portfolio | 2 |

| CHOICE 4: Drafting | 3-4 Credits |
| ARCH 101 Architectural Drafting I | 4 |
| INTR 140 Interior Drafting and Detailing | 3 |

| CHOICE 5: Three-Dimensional Spatial Development | 2-3 Credits |
| ARCH 126 Model Building | 2 |
| INTR 244 Three-Dimensional Visual Display | 3 |

| CHOICE 6: Business Related | 3-4 Credits |
| ACGC 210 Principles of Accounting I | 4 |
| BUSN 118 Introduction to Business | 3 |
| ECON 201 Principles of Economics - Micro | 3 |

| CHOICE 7: Related Professional Courses | 5 Credits |
| ARCH 146 Preservation and Adaptive Reuse Architecture | 3 |
| ARCH 181 Barrier Free Design | 3 |
| ARCH 273 Environmental Systems | 4 |
| ARCH 283 Materials of Construction | 4 |
| BLDT 261 BODA/Uniform Code | 3 |
| INTR 185 Introduction to Textiles | 3 |
| INTR 201 Cultural Diversity in the Built Environment | 3 |
| INTR 252 Construction Documents and Specifications | 2 |
| INTR 258 Interior Design Workroom Practices | 3 |

| CHOICE 8: Experiential Learning | 2-3 Credits |
| COOP 210 Cooperative Education (Technology) | 3 |
| INTR 241 Service Learning | 2 |
| INTR 283 Internship | 3 |

MINIMUM TOTAL 70

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.

<table>
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<th>I</th>
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<tbody>
<tr>
<td>INTR 110</td>
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<td>INTR 222</td>
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<td>INTR 170</td>
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<td>INTR 248</td>
<td>INTR 256</td>
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<tr>
<td>Lim.Ch.</td>
<td>Lim.Ch.</td>
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</tr>
</tbody>
</table>
Horticulture
Associate in Applied Science Degree

Curriculum Code: 10189 (Effective Fall 1997–Summer 2003)

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 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 students may find it necessary to complete specific coursework 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 220, telephone number (517) 483-1336.

Requirements

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<td>HORT 102</td>
<td>Introduction to Ornamental Horticulture</td>
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<tr>
<td>HORT 105</td>
<td>Pests and Problems of Ornamental Plants</td>
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<tr>
<td>HORT 230</td>
<td>Plant Propagation and Nursery Operations</td>
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<tr>
<td>HORT 235</td>
<td>Greenhouse Structures and Environment</td>
</tr>
<tr>
<td>LAND 100</td>
<td>Introduction to Landscape Drafting</td>
</tr>
<tr>
<td>LAND 130</td>
<td>Interior Landscaping</td>
</tr>
<tr>
<td>LAND 140</td>
<td>Evergreen and Deciduous Trees</td>
</tr>
<tr>
<td>LAND 141</td>
<td>Flowering Trees, Shrub Ground Covers</td>
</tr>
<tr>
<td>LAND 142</td>
<td>Perennial and Annual Flowering Plants</td>
</tr>
<tr>
<td>LAND 162</td>
<td>Designing Ornamental Garden</td>
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<tr>
<td>LAND 282</td>
<td>Microcomputers in Landscape Planning</td>
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<tr>
<td>WRIT 124</td>
<td>Technical Writing</td>
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Limited Choice Requirements

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<td>HORT 105</td>
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<td>HORT 107</td>
<td>HORT 108</td>
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<td>HORT 143</td>
<td>HORT 226</td>
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<td>HORT 235</td>
<td>LAND 141</td>
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<tr>
<td>LAND 100</td>
<td>WRIT 124</td>
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<td>LAND 140</td>
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<table>
<thead>
<tr>
<th>Subchoice 2A: Floriculture</th>
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<tbody>
<tr>
<td>HORT 167</td>
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<tr>
<td>HORT 109</td>
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<td>HORT 110</td>
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<tr>
<td>HORT 143</td>
</tr>
<tr>
<td>HORT 236</td>
</tr>
<tr>
<td>HORT 237</td>
</tr>
<tr>
<td>HORT 238</td>
</tr>
</tbody>
</table>

Subchoice 2B: Landscape Horticulture

| LAND 150 | Principles of Landscape Architecture | 3 |
| LAND 160 | Planting Design I                    | 3 |
| LAND 180 | Landscape Ecology                    | 3 |
| LAND 195 | Arboriculture (Urban/Forestry)       | 3 |
| LAND 225 | Landscape Cost Estimation             | 3 |
| LAND 232 | Professional Residential Landscape Design | 3 |
| LAND 233 | Grounds Management                   | 3 |

Minimum Total

<table>
<thead>
<tr>
<th>TOTAL: 62</th>
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</thead>
</table>

Notes

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.

<table>
<thead>
<tr>
<th>Subchoice 2B: Landscape Horticulture</th>
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<tbody>
<tr>
<td>LAND 150</td>
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<td>LAND 160</td>
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<tr>
<td>LAND 180</td>
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<tr>
<td>LAND 195</td>
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<tr>
<td>LAND 225</td>
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<tr>
<td>LAND 232</td>
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<td>LAND 233</td>
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LANSING COMMUNITY COLLEGE CATALOG 1997–98 ■ 125
LANDSCAPE CAREERS

LANDSCAPE ARCHITECTURE
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 10263 (Effective Fall 1997–Summer 2002)

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 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 students may find it necessary to complete specific coursework 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 220, telephone number (517) 483-1336.

REQUIREMENTS

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<tr>
<td>LAND 100</td>
<td>Introduction to Landscape Drafting (See Note 1)</td>
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</tr>
<tr>
<td>LAND 140</td>
<td>Evergreen and Deciduous Trees</td>
<td>3</td>
</tr>
<tr>
<td>LAND 141</td>
<td>Flowering Trees, Shrubs Ground Covers</td>
<td>3</td>
</tr>
<tr>
<td>LAND 150</td>
<td>Principles of Landscape Architecture</td>
<td>3</td>
</tr>
<tr>
<td>LAND 152</td>
<td>Landscape Graphics Communications - Beginning</td>
<td>3</td>
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<td>LAND 153</td>
<td>Landscape Graphics Communications - Advanced</td>
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<td>LAND 100</td>
<td>Planting Design I</td>
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<td>Planting Design II</td>
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<td>LAND 184</td>
<td>Site Design</td>
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<td>LAND 170</td>
<td>Site Grading I</td>
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<td>Site Grading II</td>
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<td>LAND 172</td>
<td>Site Layout</td>
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<td>LAND 225</td>
<td>Landscape Cost Estimation</td>
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<td>LAND 232</td>
<td>Professional Residential Landscape Design</td>
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<tr>
<td>LAND 233</td>
<td>Grounds Management</td>
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</tr>
<tr>
<td>LAND 252</td>
<td>Landscape Construction Methods</td>
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<td>LAND 252</td>
<td>Landscape Construction Details</td>
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<tr>
<td>LAND 276</td>
<td>Landscape Documents and Specifications</td>
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<td>LAND 282</td>
<td>Microcomputers in Landscape Planning</td>
<td>3</td>
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<td>LAND 283</td>
<td>Beginning LandCADD</td>
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</tr>
<tr>
<td>WRIT 124</td>
<td>Technical Writing</td>
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LIMITED CHOICE REQUIREMENTS

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       |

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.

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<thead>
<tr>
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<td>LAND 170</td>
<td>LAND 172</td>
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<td>LAND 150</td>
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<td>LAND 282</td>
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126 ■ LANSING COMMUNITY COLLEGE CATALOG 1997–98
LEGAL ASSISTANT
ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 10101 (Effective Fall 1997–Summer 2002)

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 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 students may find it necessary to complete specific coursework 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

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<td>LEGL 120</td>
<td>Legal Research I</td>
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<td>LEGL 121</td>
<td>Legal Writing I</td>
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<tr>
<td>LEGL 160</td>
<td>Critical Thinking in Law</td>
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<tr>
<td>LEGL 210</td>
<td>Litigation Procedures</td>
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<tr>
<td>LEGL 211</td>
<td>Tort Law</td>
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<td>LEGL 215</td>
<td>Business Law I, Basic Principles</td>
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<td>LEGL 225</td>
<td>Legal Research and Writing II</td>
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<tr>
<td>LEGL 228</td>
<td>Computer Technology for Legal Assistants</td>
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<tr>
<td>WRIT 121</td>
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<td>WRIT 122</td>
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LIMITED CHOICE REQUIREMENTS

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

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<tr>
<td>Writing Core Area (See Note 1)</td>
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<td>Science/Technology Core Area</td>
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</tr>
<tr>
<td>Global Perspectives and Diversity Core Area</td>
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CHOICE 2: Business Law

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<tbody>
<tr>
<td>Business Law II, Commercial Law</td>
<td>3</td>
</tr>
<tr>
<td>Business Law III, Business Organizations</td>
<td>3</td>
</tr>
<tr>
<td>International Legal Issues and Organizations</td>
<td>3</td>
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</tbody>
</table>

CHOICE 3: General Law

<table>
<thead>
<tr>
<th></th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Criminal Law</td>
<td>3</td>
</tr>
<tr>
<td>Litigation Specialties</td>
<td>3</td>
</tr>
<tr>
<td>Real Estate Transaction</td>
<td>3</td>
</tr>
<tr>
<td>Probate Law and Procedure</td>
<td>3</td>
</tr>
<tr>
<td>Domestic Relations</td>
<td>3</td>
</tr>
<tr>
<td>Administrative Law</td>
<td>3</td>
</tr>
<tr>
<td>Legal Interviewing and Investigation</td>
<td>3</td>
</tr>
<tr>
<td>Bankruptcy and Collections</td>
<td>3</td>
</tr>
<tr>
<td>Legal Assistant Internship</td>
<td>3</td>
</tr>
</tbody>
</table>

CHOICE 4: Government

<table>
<thead>
<tr>
<th></th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Political System</td>
<td>4</td>
</tr>
<tr>
<td>State and Local Government</td>
<td>4</td>
</tr>
</tbody>
</table>

CHOICE 5: Computer Proficiency

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Wordperfect for the Office/Intermediate Keyboarding</td>
<td>4</td>
</tr>
<tr>
<td>Microsoft Word for the Office/Intermediate Keyboarding</td>
<td>4</td>
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</tbody>
</table>

MINIMUM TOTAL: 64

NOTES
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.

<table>
<thead>
<tr>
<th>I</th>
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<th>III</th>
<th>IV</th>
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<tbody>
<tr>
<td>LEGL 115</td>
<td>LEGL 120</td>
<td>LEGL 121</td>
<td>LEGL 225</td>
</tr>
<tr>
<td>LEGL 160</td>
<td>LEGL 210</td>
<td>LEGL 215</td>
<td>LEGL 228</td>
</tr>
<tr>
<td>LEGL 215</td>
<td>WRIT 122</td>
<td>Lim.Ch. 1</td>
<td>Lim.Ch. 3</td>
</tr>
<tr>
<td>WRIT 121</td>
<td>Lim.Ch. 2</td>
<td>Lim.Ch. 3</td>
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<td>Lim.Ch. 5</td>
<td>Lim.Ch. 3</td>
<td>Lim.Ch. 4</td>
<td>Lim.Ch. 4</td>
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</tbody>
</table>

LANSMING COMMUNITY COLLEGE CATALOG 1997-98 127
LEGAL ASSISTANT

LEGAL ASSISTANT POST-BACCALAUREATE
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 10744 (Effective Fall 1997–Summer 2002)

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 Class 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

<table>
<thead>
<tr>
<th>CODE</th>
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</thead>
<tbody>
<tr>
<td>LEGL 115</td>
<td>Legal Assistant Career and Ethics</td>
<td>3</td>
</tr>
<tr>
<td>LEGL 120</td>
<td>Legal Research I</td>
<td>3</td>
</tr>
<tr>
<td>LEGL 121</td>
<td>Legal Writing I</td>
<td>3</td>
</tr>
<tr>
<td>LEGL 210</td>
<td>Litigation Procedures</td>
<td>4</td>
</tr>
<tr>
<td>LEGL 211</td>
<td>Tort Law</td>
<td>2</td>
</tr>
<tr>
<td>LEGL 215</td>
<td>Business Law I, Basic Principles</td>
<td>3</td>
</tr>
<tr>
<td>LEGL 220</td>
<td>Legal Research and Writing II</td>
<td>3</td>
</tr>
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</table>

LIMITED CHOICE REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>TOTAL: 12 CREDITS</th>
</tr>
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<tbody>
<tr>
<td>CHOICE 1: Business Law</td>
<td>3 Credits</td>
<td></td>
</tr>
<tr>
<td>LEGL 216</td>
<td>Business Law II, Commercial Law</td>
<td>3</td>
</tr>
<tr>
<td>LEGL 217</td>
<td>Business Law III, Business Organizations</td>
<td>9</td>
</tr>
<tr>
<td>LEGL 220</td>
<td>International Legal Issues and Organizations</td>
<td>3</td>
</tr>
</tbody>
</table>

| CHOICE 2: General Law        | 9 Credits                   |
| CAJS 103 | Criminal Law                  | 3                 |
| 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 Interviewing and Investigation | 3   |
| LEGL 227 | Bankruptcy and Collections   | 3                 |
| LEGL 228 | Computer Technology for Legal Assistants | 3 |
| LEGL 280 | Legal Assistant Internship   | 3                 |

MINIMUM TOTAL

33

NOTES
1. Students in this curriculum will be granted department approval to take these courses concurrently with LEGL 115 and LEGL 215. Contact the Business Careers Department, telephone number (517) 483-1522.

2. 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.

LEG 215 LEG 225
LEG 120 LEG 121
LEG 210 Lim.Ch.
LEG 215 Lim.Ch.
**HUMAN RESOURCE MANAGEMENT**

**ASSOCIATE IN BUSINESS DEGREE**

**Curriculum Code:** 10712 (Effective Fall 1997–Summer 2002)

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 Class Schedule for course prerequisite information. Basic skills assessment and advising information may be found on page 7 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 students may find it necessary to complete specific coursework 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**

<table>
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<tr>
<td>CODE</td>
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<tr>
<td>BUSN 118</td>
<td>Introduction to Business</td>
</tr>
<tr>
<td>CISB 200</td>
<td>Information Systems Technology and Problem Solving</td>
</tr>
<tr>
<td>LABR 204</td>
<td>Employment Law for Managers</td>
</tr>
<tr>
<td>MGMT 200</td>
<td>Creative Thinking for Business</td>
</tr>
<tr>
<td>MGMT 223</td>
<td>Supervision</td>
</tr>
<tr>
<td>MGMT 224</td>
<td>Human Resource Management</td>
</tr>
<tr>
<td>MGMT 225</td>
<td>Principles of Management</td>
</tr>
<tr>
<td>MGMT 227</td>
<td>Training and Development for Business</td>
</tr>
<tr>
<td>MGMT 228</td>
<td>Organizational Behavior</td>
</tr>
<tr>
<td>MGMT 229</td>
<td>Compensation Management</td>
</tr>
<tr>
<td>MGMT 231</td>
<td>Team Development</td>
</tr>
<tr>
<td>MGMT 234</td>
<td>Diversity in the Workplace - A Domestic &amp; Global Perspective</td>
</tr>
<tr>
<td>MGMT 237</td>
<td>Managing for Continuous Improvement</td>
</tr>
<tr>
<td>SPCH 110</td>
<td>Oral Communication in the Workplace</td>
</tr>
<tr>
<td>WRIT 127</td>
<td>Business Communications</td>
</tr>
</tbody>
</table>

**LIMITED CHOICE REQUIREMENTS**

**TOTAL: 16–19 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 |

**CHOICE 2:** Specialty Related (See Note 2) 11–13 Credits

| BUSN 191 | Independent Study in Management | 1 |
| BUSN 192 | Independent Study in Management | 2 |
| BUSN 193 | Independent Study in Management | 3 |
| BUSN 229 | Public Relations | 2 |
| LEGL 215 | Business Law I Basic Principles | 3 |
| MGMT 239 | Time and Stress Management | 3 |
| MGMT 290 | Management Internship | 3 |
| MGMT 304 | Organizational Development | 3 |
| MGMT 329 | Advanced Management Communication Skills | 3 |
| MGMT 337 | Human Resource Management Skills | 3 |
| MKTG 200 | Introduction to Psychology | 3 |
| MKTG 201 | Current Issues in Business | 3 |
| MKTG 215 | Marketing and Managing Your Professional Image | 3 |
| PSYC 200 | Introduction to Psychology | 4 |

**CHOICE 3:** Computer Related (See Note 3) 2 Credits

**CHOICE 4:** Quantitative Related 3–4 Credits

| ACCG 100 | Practical Accounting for Non-Majors | 3 |
| ACCG 101 | Accounting Information 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**

50

**NOTES**

1. Students completing REQUIREMENTS have fulfilled the requirements for these Core areas.
2. Students may also choose from courses with a LABR prefix not already used to meet degree requirements and/or a maximum of 2 credits total from the T.I.M.E. Series (course codes MGMT 240 through MGMT 277).
3. Choose a CBIS-prefix course of 10 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.

<table>
<thead>
<tr>
<th>I</th>
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<th>III</th>
<th>IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUSN 118</td>
<td>MGMT 224</td>
<td>LABR 204</td>
<td>MGMT 227</td>
</tr>
<tr>
<td>CISB 200</td>
<td>MGMT 228</td>
<td>MGMT 220</td>
<td>MGMT 229</td>
</tr>
<tr>
<td>MGMT 223</td>
<td>SPC 110</td>
<td>MGMT 225</td>
<td>MGMT 237</td>
</tr>
<tr>
<td>MGMT 234</td>
<td>WRIT 127</td>
<td>MGMT 231</td>
<td>Lim Ch.</td>
</tr>
<tr>
<td>Lim Ch.</td>
<td>Lim Ch.</td>
<td>Lim Ch.</td>
<td>Lim Ch.</td>
</tr>
</tbody>
</table>

**LANING COMMUNITY COLLEGE CATALOG 1997–98**
Curriculum Code: 10155 (Effective Fall 1997–Summer 2002)

Specialists in both employee services and problem solving, personnel/labor relations managers are involved in implementing an organization's personnel policies, procedures, and staffing. LGG graduates of this program are prepared to work in a variety of larger businesses and organizations, including labor unions and government agencies. 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 students may find it necessary to complete specific coursework 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) 493-1529.

REQUIREMENTS

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<td>BUSN 118 Introduction to Business</td>
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<tr>
<td>CISB 200 Information Systems Technology and Problem Solving</td>
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<tr>
<td>LABR 200 Introduction to Labor Relations</td>
<td>3</td>
</tr>
<tr>
<td>LABR 261 Collective Bargaining</td>
<td>3</td>
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<tr>
<td>LABR 202 Grievances and Arbitration</td>
<td>3</td>
</tr>
<tr>
<td>LABR 203 Labor Law</td>
<td>3</td>
</tr>
<tr>
<td>LABR 204 Employment Law for Managers</td>
<td>3</td>
</tr>
<tr>
<td>LEGL 215 Business Law I, Basic Principles</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 223 Supervision</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 224 Human Resource Management</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 225 Principles of Management</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 226 Organizational Behavior</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 234 Diversity in the Workplace - A Domestic &amp; Global Perspective</td>
<td>3</td>
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<tr>
<td>SPCH 100 Oral Communication in the Workplace</td>
<td>3</td>
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<tr>
<td>WRIT 127 Business Communications</td>
<td>3</td>
</tr>
</tbody>
</table>

LIMITED CHOICE REQUIREMENTS

| TOTAL: 15-16 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

CHOICE 2: Accounting 3-4 Credits
- ACCG 101 Accounting Information for Management 2
- ACCG 210 Principles of Accounting I 4

| CREDIT HOURS |

CHOICE 3: Labor Relations Related (See Note 2) 12 Credits
- ACCG 311 Principles of Accounting II 4
- BUSN 299 Public Relations 2
- ECON 201 Principles of Economics - Micro 3
- ECON 202 Principles of Economics - Macro 3
- MGMT 209 Creative Thinking for Business 3
- MGMT 227 Training and Development for Business 2
- MGMT 231 Team Development 3
- MGMT 237 Managing for Continual Improvement 3
- MGMT 238 Management Internship 3
- MKTG 304 Organizational Development 3
- MKTG 100 Current Issues in Business 3
- MKTG 249 Marketing and Managing Your Professional Image 3
- PSYC 200 Introduction to Psychology 4

MINIMUM TOTAL 50

NOTES
1. Students completing REQUIREMENTS have fulfilled the requirements for these core areas.
2. Students may also choose a maximum of 4 credits total from the T.I.M.E. Series (course codes MGMT 240–MGMT 277).

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.

LABOR RELATIONS CERTIFICATE OF COMPLETION

Curriculum Code: 10525 (Effective Fall 1997–Summer 2002)

Certificate holders may improve their opportunities for advancement in this or a related area. Additional education enhances the individual’s employment opportunities.

REQUIREMENTS

| TOTAL: 15 CREDITS |

| CREDIT HOURS |

| LABR 200 Introduction to Labor Relations 3 |
| LABR 201 Collective Bargaining 3 |
| LABR 202 Grievances and Arbitration 3 |
| LABR 203 Labor Law 3 |
| LABR 204 Employment Law for Managers 3 |

MINIMUM TOTAL 15

SUGGESTED COURSE SEQUENCE

| LABR 200 Introduction to Labor Relations 3 |
| LABR 201 Collective Bargaining 3 |
| LABR 202 Grievances and Arbitration 3 |
| LABR 203 Labor Law 3 |
| LABR 204 Employment Law for Managers 3 |
**MANAGEMENT**

**ASSOCIATE IN BUSINESS DEGREE**

Curriculum Code: 10245 (Effective Fall 1997–Summer 2002)

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 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 students may find it necessary to complete specific coursework 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**

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
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<tr>
<td>BUSN 118</td>
<td>Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>BUSN 201</td>
<td>International Business</td>
<td>3</td>
</tr>
<tr>
<td>CISB 200</td>
<td>Information Systems Technology and Problem Solving</td>
<td>3</td>
</tr>
<tr>
<td>LABR 200</td>
<td>Introduction to Labor Relations</td>
<td>3</td>
</tr>
<tr>
<td>LABR 204</td>
<td>Employment Law for Managers</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 200</td>
<td>Creative Thinking for Business</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 223</td>
<td>Supervision</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 224</td>
<td>Human Resource Management</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 225</td>
<td>Principles of Management</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 228</td>
<td>Organizational Behavior</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 231</td>
<td>Team Development</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 234</td>
<td>Diversity in the Workplace - A Domestic &amp; Global Perspective</td>
<td>3</td>
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<tr>
<td>MGMT 237</td>
<td>Managing for Continual Improvement</td>
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<tr>
<td>MKTG 200</td>
<td>Principles of Marketing</td>
<td>3</td>
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<tr>
<td>SPCH 110</td>
<td>Oral Communication in the Workplace</td>
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</tr>
<tr>
<td>WRIT 127</td>
<td>Business Communications</td>
<td>3</td>
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</tbody>
</table>

**LIMITEED CHOICE REQUIREMENTS**

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 |

**CHOICE 2:** Accounting

| ACCG 101 | Accounting Information for Management | 3 |
| ACCG 210 | Principles of Accounting | 4 |

**CHOICE 3:** Management Related (See Note 2) 9–11 Credits

| ACCG 211 | Principles of Accounting II | 4 |
| BUSN 191 | Independent Study in Management | 1 |
| BUSN 192 | Independent Study in Management | 2 |
| BUSN 193 | Independent Study in Management | 3 |
| BUSN 229 | Public Relations | 2 |
| BUSN 265 | Small Business Management | 3 |
| ECCN 201 | Principles of Economics - Micro | 3 |
| ECCN 202 | Principles of Economics - Macro | 3 |
| LEGL 215 | Business Law I, Basic Principles | 3 |
| MGMT 227 | Training and Development for Business | 2 |
| MGMT 236 | Time and Stress Management | 3 |
| MGMT 260 | Management Internship | 3 |
| MKTG 119 | Marketing and Managing Your Professional Image | 3 |
| MKTG 202 | Managerial Marketing | 3 |

**MINIMUM TOTAL**

50

**NOTES**

1. Students completing REQUIREMENTS have fulfilled the requirements for these Core areas.
2. Students may also choose a maximum of 2 credits total from the T.I.M.E. Series (course codes MGMT 240 through MGMT 277) and/or a maximum of 2 credits of 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.

<table>
<thead>
<tr>
<th>BUSN 118</th>
<th>BUSN 201</th>
<th>MGMT 225</th>
<th>LABR 234</th>
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<tbody>
<tr>
<td>CISB 200</td>
<td>MGMT 223</td>
<td>MGMT 229</td>
<td>MGMT 200</td>
</tr>
<tr>
<td>LABR 204</td>
<td>MGMT 224</td>
<td>MKTG 200</td>
<td>MGMT 237</td>
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<tr>
<td>MGMT 234</td>
<td>MGMT 231</td>
<td>SPCH 110</td>
<td>Lim.Ch.</td>
</tr>
<tr>
<td>Lim.Ch.</td>
<td>WRIT 127</td>
<td>Lim.Ch.</td>
<td>Lim.Ch.</td>
</tr>
</tbody>
</table>

**MANAGEMENT CERTIFICATE OF ACHIEVEMENT**

Curriculum Code: 10249 (Effective Fall 1997–Summer 2002)

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.

**REQUIREMENTS**

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
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<tbody>
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<td>BUSN 118</td>
<td>Introduction to Business</td>
<td>3</td>
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<tr>
<td>CISB 200</td>
<td>Information Systems Technology and Problem Solving</td>
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<tr>
<td>LABR 204</td>
<td>Employment Law for Managers</td>
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<tr>
<td>MGMT 224</td>
<td>Human Resource Management</td>
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<tr>
<td>MGMT 225</td>
<td>Principles of Management</td>
<td>3</td>
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<tr>
<td>MGMT 228</td>
<td>Organizational Behavior</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 231</td>
<td>Team Development</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 234</td>
<td>Diversity in the Workplace - A Domestic &amp; Global Perspective</td>
<td>3</td>
</tr>
</tbody>
</table>

**LIMITEED CHOICE REQUIREMENTS**

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

**CHOICE 1:** Accounting

| ACCG 101 | Accounting Information for Management | 3 |
| ACCG 210 | Principles of Accounting | 4 |

**CHOICE 2:** Communication Skills

| SPCH 110 | Oral Communication in the Workplace     | 3 |
| WRIT 127 | Business Communications                  | 3 |

**MINIMUM TOTAL**

50

**SUGGESTED COURSE SEQUENCE**

<table>
<thead>
<tr>
<th>BUSN 118</th>
<th>LABR 204</th>
</tr>
</thead>
<tbody>
<tr>
<td>CISB 200</td>
<td>MGMT 223</td>
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<tr>
<td>MGMT 224</td>
<td>MGMT 231</td>
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<td>MGMT 225</td>
<td>MGMT 234</td>
</tr>
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<td>Lim.Ch.</td>
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</table>
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.

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<tr>
<td>MGMT 304</td>
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<td>MGMT 329</td>
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<td>MGMT 335</td>
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<td>MGMT 337</td>
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<td>MGMT 338</td>
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<td>Lim.Ch.</td>
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</table>

LIMITED CHOICE REQUIREMENTS

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

CHOICE 1: Management
- MGMT 225: Principles of Management 3 credits
- MGMT 350: Introduction to Management 3 credits

CHOICE 2: Finance
- ACCG 271: Principles of Finance 3 credits
- MGMT 348: Managerial Finance 3 credits

CHOICE 3: Business Related (See Note 2)
- ACCG 210: Principles of Accounting I 4 credits
- ACCG 211: Principles of Accounting II 4 credits
- BUSN 118: Introduction to Business 3 credits
- BUSN 201: International Business 3 credits
- CISB 105: Introduction to Computer Information Systems 3 credits
- ECON 201: Principles of Economics - Micro 3 credits
- ECON 202: Principles of Economics - Macro 3 credits
- LEGL 215: Business Law I: Basic Principles 3 credits
- MKTG 250: Principles of Marketing 3 credits
- MKTG 235: Marketing Internship 3 credits
- WRIT 127: Business Communications 3 credits

MINIMUM TOTAL 30 credits

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 277) and/or a maximum of 2 credits from CABS-prefix courses of 110 or above.
COMPUTER SALES SPECIALIST
ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 10179 (Effective Fall 1997–Summer 2002)

Computer sales representatives sell computers and network hardware and software systems. They analyze a customer's needs and recommend the computer system that best meets the customer's requirements. They emphasize salable features, such as flexibility, cost, capacity, and economy of 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 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 students may find it necessary to complete specific coursework 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

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<tr>
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<tr>
<td>CABS 110</td>
<td>Microsoft Office</td>
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<td>CABS 195</td>
<td>Microsoft Windows</td>
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<td>CISR 100</td>
<td>Introduction to Computer Information Systems</td>
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<tr>
<td>CISR 164</td>
<td>Introduction to DOS</td>
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<td>CISR 167</td>
<td>DOS Management</td>
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<td>CISR 119</td>
<td>Windows Programming With Visual BASIC</td>
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<td>CISR 130</td>
<td>Data Communications</td>
<td>3</td>
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<td>CISR 260</td>
<td>Information Systems Technology and Problem Solving</td>
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<td>CISR 235</td>
<td>Microcomputer Hardware Support</td>
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<td>MGMT 234</td>
<td>Diversity in the Workplace - A Domestic &amp; Global Perspective</td>
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<td>MKTG 119</td>
<td>Marketing and Managing Your Professional Image</td>
<td>3</td>
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<tr>
<td>MKTG 120</td>
<td>Sales</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 123</td>
<td>Computer Field Sales Internship</td>
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</tr>
<tr>
<td>MKTG 200</td>
<td>Principles of Marketing</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 221</td>
<td>Consumer Behavior</td>
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<tr>
<td>SPCH 110</td>
<td>Oral Communication in the Workplace</td>
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<td>WRIT 127</td>
<td>Business Communications</td>
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LIMITED CHOICE REQUIREMENTS

<table>
<thead>
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<td>BUSN 118</td>
<td>Accounting Principles</td>
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<tr>
<td>CABS 110</td>
<td>Business Management</td>
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<tr>
<td>ECON 201</td>
<td>Principles of Economics - Micro</td>
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<td>MGMT 225</td>
<td>Principles of Management</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 239</td>
<td>Time and Stress Management</td>
<td>3</td>
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<td>MKTG 130</td>
<td>Retailing</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 140</td>
<td>Introduction to Marketing</td>
<td>3</td>
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<tr>
<td>MKTG 202</td>
<td>Managerial Marketing</td>
<td>3</td>
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<tr>
<td>MKTG 204</td>
<td>Marketing Research</td>
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TOTAL: 49 CREDITS

MINIMUM TOTAL: 60 CREDITS

NOTES:
1. Students completing REQUIREMENTS have fulfilled the requirements for those Core areas.
2. Choose from CABS prefix courses of 111 or above, and/or CISB prefix courses 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 may do so, either by enrolling in courses from another school, or by fulfilling the requirements to fulfill them should contact an academic advisor or counselor for help with adjustments.

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<td>BUSN 118</td>
<td>CABS 107</td>
<td>CABS 110</td>
<td>CABS 235</td>
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<td>CABS 195</td>
<td>CABS 119</td>
<td>CABS 130</td>
<td>MGMT 234</td>
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<td>CABS 195</td>
<td>MKTG 119</td>
<td>CABS 200</td>
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<td>CABS 194</td>
<td>MKTG 200</td>
<td>MKTG 120</td>
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<td>WRIT 127</td>
<td>SPCH 110</td>
<td>MKTG 221</td>
<td>Lim. Ch.</td>
</tr>
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</table>

LIMITED CHOICE REQUIREMENTS

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

CHOICE 2: Computer Related (See Note 2) 3-4 Credits

LANSING COMMUNITY COLLEGE CATALOG 1997-98  133
FIELD SALES AND MARKETING
ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 10190 (Effective Fall 1997-Summer 2002)

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 Class Schedule for course prerequisite information. Basic skills assessment and advising information may be found on page 18 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 students may find it necessary to complete specific coursework 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) 483-5122.

REQUIREMENTS

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<tr>
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<tr>
<td>BUSN 116</td>
<td>Introduction to Business</td>
<td>3</td>
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<tr>
<td>LEGL 215</td>
<td>Business Law I, Basic Principles</td>
<td>3</td>
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<td>MGMT 209</td>
<td>Creative Thinking for Business</td>
<td>3</td>
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<td>MGMT 234</td>
<td>Diversity in the Workplace - A Domestic &amp; Global Perspective</td>
<td>3</td>
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<tr>
<td>MKTG 100</td>
<td>Current Issues in Business</td>
<td>3</td>
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<tr>
<td>MKTG 119</td>
<td>Marketing and Managing Your Professional Image</td>
<td>3</td>
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<td>MKTG 133</td>
<td>Sales</td>
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<td>MKTG 121</td>
<td>Advanced Sales</td>
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<td>MKTG 122</td>
<td>Field Sales Internship</td>
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<tr>
<td>MKTG 200</td>
<td>Principles of Marketing</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 221</td>
<td>Consumer Behavior</td>
<td>2</td>
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<td>SPCH 116</td>
<td>Oral Communication in the Workplace</td>
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</tr>
<tr>
<td>WRIT 127</td>
<td>Business Communications</td>
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LIMITED CHOICE REQUIREMENTS

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<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
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LIMITED TOTAL: 17 CREDITS

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

CHOICE 1: General Education Core Areas (See Note 1)
Writing Core Area
Speech Communication Core Area
Science/Technology Core Area
Global Perspectives and Diversity Core Area

CHOICE 2: Sales/Marketing Related (See Note 2)
Principles of Accounting I
Principles of Accounting II
International Business
Public Relations
Microsoft Office
Principles of Economics - Micro
Principles of Economics - Macro
Principles of Management
Organizational Behavior
Time and Stress Management

FIELD SALES AND MARKETING
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 10242 (Effective Fall 1997-Summer 2002)

Certificate holders may improve their opportunities for advancement in this or a related area. Additional education enhances an individual's employment opportunities.

REQUIREMENTS

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<tr>
<td>MKTG 109</td>
<td>Marketing and Managing Your Professional Image</td>
<td>3</td>
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<td>MKTG 122</td>
<td>Sales</td>
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</tr>
<tr>
<td>MKTG 122</td>
<td>Field Sales Internship</td>
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</tr>
<tr>
<td>MKTG 200</td>
<td>Principles of Marketing</td>
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<tr>
<td>SPCH 110</td>
<td>Oral Communication in the Workplace</td>
<td>3</td>
</tr>
<tr>
<td>WRIT 127</td>
<td>Business Communications</td>
<td>3</td>
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</tbody>
</table>

LIMITED TOTAL: 6 CREDITS

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

CHOICE 1: Marketing Related (See Note 1)

MINIMUM TOTAL: 30 CREDITS

NOTES
1. Students completing REQUIREMENTS have fulfilled the requirements for these Core areas.
2. Students may also choose up to 4 credits of T.I.M.E. Series courses (MGMT 240 through MGMT 270).

SUGGESTED COURSE SEQUENCE

<table>
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<td>BUSN 118</td>
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<td>MKTG 221</td>
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134 ■ LANSING COMMUNITY COLLEGE CATALOG 1997-98
MARKETING

ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 10204 (Effective Fall 1997–Summer 2002)

Marketing is the set of activities that aim 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 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 students may find it necessary to complete specific coursework 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 216, telephone number (517) 483-1522.

REQUIREMENTS

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<td>BUSN 229</td>
<td>Public Relations</td>
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<td>CABS 110</td>
<td>Microsoft Office</td>
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<td>CISB 200</td>
<td>Information Systems Technology and Problem Solving</td>
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<td>MKTG 224</td>
<td>Diversity in the Workplace - A Domestic &amp; Global Perspective</td>
<td>3</td>
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<td>MKTG 100</td>
<td>Current Issues in Business</td>
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<td>MKTG 119</td>
<td>Marketing and Managing Your Professional Image</td>
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<td>MKTG 120</td>
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<td>MKTG 130</td>
<td>Retailing</td>
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<td>MKTG 140</td>
<td>Introduction to Advertising</td>
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<td>MKTG 204</td>
<td>Marketing Research</td>
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<tr>
<td>WRIT 127</td>
<td>Business Communications</td>
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LIMITED CHOICE REQUIREMENTS

Total: 14 Credits

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

CHOICE 1: General Education Core Areas (See Note 1) 6 Credits (See the GENERAL EDUCATION section above)
- Writing Core Area 0
- Spoken Communication Core Area 0
- Science/Technology Core Area 0
- Global Perspectives and Diversity Core Area 0

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
- ACIS 210 Principles of Accounting I 4
- BUSN 201 International Business 3
- BUSN 254 Introduction to Investments 2
- ECON 201 Principles of Economics - Micro 3
- ECON 202 Principles of Economics - Macro 3
- LEGL 215 Business Law I, Basic Principles 3
- MKTG 200 Creative Thinking for Business 3
- MKTG 203 Supervision 3
- MKTG 205 Principles of Management 3
- MKTG 231 Team Development 3
- MKTG 121 Advanced Sales 2
- MKTG 131 Merchandising 2
- MKTG 231 Independent Study in Marketing 1
- MKTG 232 Independent Study in Marketing 2
- MKTG 233 Independent Study in Marketing 3

MINIMUM TOTAL: 60 Credits

NOTES
1. Students completing REQUIREMENTS have fulfilled the requirements for these Core areas.
2. Students may also choose up to 4 credits of T.I.M.E. Series courses (MKTG 240 through MKTG 270).

SUGGESTED COURSE SEQUENCE

Students should see their 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) should contact their academic advisor or counselor for help with adjustments.

BUSN 118 | MKTG 234 | BUSN 229 | CISB 200
CABS 110 | MKTG 119 | MKTG 120 | MKTG 130
MKTG 100 | MKTG 200 | MKTG 140 | MKTG 222
WRIT 127 | SPCH 110 | MKTG 204 | Lim.Ch.
Lim.Ch. | Lim.Ch. | MKTG 221 | Lim.Ch.
Lim.Ch. | Lim.Ch. | MKTG 221 | Lim.Ch.

MARKETING

CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 10225 (Effective Fall 1997–Summer 2002)

Certificate holders may improve their opportunities for advancement in this or a related area. Additional education enhances an individual's employment opportunities.

REQUIREMENTS

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<tr>
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<td>BUSN 118</td>
<td>Introduction to Business</td>
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<tr>
<td>MKTG 119</td>
<td>Marketing and Managing Your Professional Image</td>
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<td>Sales</td>
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<td>MKTG 130</td>
<td>Retailing</td>
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<td>MKTG 200</td>
<td>Principles of Marketing</td>
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<td>SPCH 110</td>
<td>Oral Communication in the Workplace</td>
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<tr>
<td>WRIT 127</td>
<td>Business Communications</td>
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LIMITED CHOICE REQUIREMENTS

Total: 6 Credits

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

CHOICE 1: Marketing Related (See Note 1) 5 Credits

MINIMUM TOTAL: 30 Credits

NOTES
1. Choose any course with a MKTG prefix not already used to meet certificate requirements.

SUGGESTED COURSE SEQUENCE

BUSN 118 | MKTG 120
CABS 110 | MKTG 130
MKTG 200 | MKTG 202
WRIT 127 | SPCH 110
Lim.Ch. | Lim.Ch.

LANSING COMMUNITY COLLEGE CATALOG 1997–98 135
MEDIA TECHNOLOGY

ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 10184 (Effective Fall 1997–Summer 2002)

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 Class Schedule for course prerequisites 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 students may find it necessary to complete specific coursework in mathematics. For information on how to fulfill all general education requirements, see page 22.

INFORMATION

Contact the Media Technology Program, Academic and Office Facility, Room 102, telephone number (617) 483-1670.

<table>
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<tr>
<td>C100</td>
<td>Introduction to Computer Information Systems (See Note 1)</td>
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<td>T110</td>
<td>An Introduction to the Broadcast and Electronic Media</td>
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<tr>
<td>T120</td>
<td>Audio Production I</td>
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<td>T130</td>
<td>Radio Production I</td>
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<td>T150</td>
<td>TV Production I</td>
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<td>T240</td>
<td>Script and Copywriting for the Media</td>
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<td>T243</td>
<td>The Ethics and Social Impact of the Media</td>
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<td>T295</td>
<td>Media Internship (See Note 2)</td>
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<td>S120</td>
<td>Dynamics of Communication</td>
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<tr>
<td>W121</td>
<td>Composition I</td>
</tr>
</tbody>
</table>

LIMITED CHOICE REQUIREMENTS

Total: 27–28 Credits

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

<table>
<thead>
<tr>
<th>CHOICE 1: General Education Core Areas</th>
<th>6 Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Writing Core Area (See Note 3)</td>
<td>0</td>
</tr>
<tr>
<td>Speech Communication Core Area (See Note 3)</td>
<td>0</td>
</tr>
<tr>
<td>Science/Technology Core Area</td>
<td>3</td>
</tr>
<tr>
<td>Global Perspectives and Diversity Core Area</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CHOICE 2: Media Specialty (Choose one Subchoice)</th>
<th>17–18 Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subchoice 2A: Audio</td>
<td></td>
</tr>
<tr>
<td>T121 Audio Recording I</td>
<td>4</td>
</tr>
<tr>
<td>T152 Sound Reinforcement</td>
<td>4</td>
</tr>
<tr>
<td>T220 Audio Production II</td>
<td>4</td>
</tr>
<tr>
<td>T221 Audio Recording II</td>
<td>4</td>
</tr>
<tr>
<td>T223 Sound Reinforcement Practicum</td>
<td>2</td>
</tr>
</tbody>
</table>

| Subchoice 2B: Radio                             |              |
| T230 Radio Production II                        | 4            |
| T231 Radio Programming and Promotions           | 3            |
| T232 Radio Workshop (See Note 4)               | 2            |
| T241 Radio News Reporting                      | 3            |
| T242 Radio Sales and Marketing                  | 3            |

Subchoice 2C: Video/Television

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>T151</td>
<td>Electronic Field Production I</td>
<td>4</td>
</tr>
<tr>
<td>T250</td>
<td>Television Studio Production</td>
<td>4</td>
</tr>
<tr>
<td>T251</td>
<td>Electronic Field Production II</td>
<td>4</td>
</tr>
<tr>
<td>T252</td>
<td>Lighting for Television and Video</td>
<td>3</td>
</tr>
<tr>
<td>T254</td>
<td>Electronic Presentation Graphics</td>
<td>3</td>
</tr>
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</table>

Subchoice 2D: General Media Occupations (See Note 5)

<table>
<thead>
<tr>
<th>CHOICE 3: Media-Related (See Note 6)</th>
<th>4 Credits</th>
</tr>
</thead>
</table>

MINIMUM TOTAL

62

NOTES

1. Students having demonstrated computer proficiency should consult their program advisor for alternatives to C100.
2. Enrollment in T150 will be limited to Media Technology majors who have successfully completed 75% of their MTEC course work.
3. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.
4. MTEC 232 must be taken twice for a total of 4 credits. A Media Technology major may not apply more than four credits in MTEC 232 toward this degree.
5. Credits must be taken from Subchoices 2A, 2B, 2C, and/or departmentally approved MTEC electives or other departmentally approved electives. Students following Subchoice 2D must consult with a MTEC Program Advisor regarding course selection.
6. 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 courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

<table>
<thead>
<tr>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>T110</td>
<td>T240</td>
<td>C100</td>
<td>T295</td>
</tr>
<tr>
<td>MTEC</td>
<td>MTEC</td>
<td>MTEC</td>
<td>MTEC</td>
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<tr>
<td>120</td>
<td>243</td>
<td>121</td>
<td>243</td>
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<td>Lim.Ch.</td>
<td>Lim.Ch.</td>
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<td>Lim.Ch.</td>
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<tr>
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<td>Lim.Ch.</td>
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</tr>
</tbody>
</table>

136 ▲ LANSING COMMUNITY COLLEGE CATALOG 1997–98
### ADMINISTRATIVE ASSISTANT ASSOCIATE IN BUSINESS DEGREE

**Curriculum Code:** 10114 (Effective Fall 1997–Summer 2002)

The administrative assistant is generally responsible for coordinating and expediting office functions under the direction of the business executive. Specific duties may include activities related to communications, personnel, budget, records control, and computers. The administrative assistant is characterized by varied skills and flexibility and frequently develops a close and confidential relationship with the executive. The administrative assistant becomes the primary information source for the chief administrator and is consulted on a regular basis on matters of policy and procedure for the institutions human, physical and monetary resources. Sample job titles include office manager, administrative secretary and administrative assistant.

**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 6 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 students may find it necessary to complete specific coursework 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

<table>
<thead>
<tr>
<th>REQUIREMENT CODE</th>
<th>COURSE TITLE</th>
<th>CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGG 100</td>
<td>Practical Accounting for Non-Majors</td>
<td>3</td>
</tr>
<tr>
<td>CISB 200</td>
<td>Information Systems Technology and Problem Solving</td>
<td>3</td>
</tr>
<tr>
<td>LEGL 215</td>
<td>Business Law I, Basic Principles</td>
<td>3</td>
</tr>
<tr>
<td>MATH 117</td>
<td>Math for Business</td>
<td>4</td>
</tr>
<tr>
<td>OADM 102</td>
<td>Editing Business Documents</td>
<td>2</td>
</tr>
<tr>
<td>OADM 195</td>
<td>Human Behavior in the Work Place</td>
<td>3</td>
</tr>
<tr>
<td>OADM 200</td>
<td>Critical Thinking</td>
<td>3</td>
</tr>
<tr>
<td>OADM 203</td>
<td>Professional Office Procedures</td>
<td>1</td>
</tr>
<tr>
<td>OADM 215</td>
<td>Records and Information Management I</td>
<td>3</td>
</tr>
<tr>
<td>OADM 216</td>
<td>Records and Information Management II</td>
<td>4</td>
</tr>
<tr>
<td>OADM 220</td>
<td>Administrative Office Management</td>
<td>4</td>
</tr>
<tr>
<td>OADM 240</td>
<td>Office Internship</td>
<td>3</td>
</tr>
<tr>
<td>OADM 275</td>
<td>Cultural Differences in Business</td>
<td>3</td>
</tr>
<tr>
<td>SPCH 110</td>
<td>Oral Communication in the Workplace</td>
<td>3</td>
</tr>
<tr>
<td>WRIT 114</td>
<td>Business English</td>
<td>3</td>
</tr>
<tr>
<td>WRIT 127</td>
<td>Business Communications</td>
<td>3</td>
</tr>
</tbody>
</table>

### LIMITED CHOICE REQUIREMENTS

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

**CHOICE 2:** Word Processing  6 Credits

**Subchoice 2A:** WordPerfect

- CABS 195 WordPerfect for the Office/Intermediate Keyboarding: 4
- CABS 112 Advanced WordPerfect for the Office: 4

**Subchoice 2B:** Microsoft Word

- CABS 113 Microsoft Word for the Office/Intermediate Keyboarding: 4
- CABS 116 Advanced Microsoft Word for the Office: 4

### CHOOSE 3:

- CABS 123 Lotus 123 for DOS: 2
- CABS 126 Excel: 2
- CABS 128 Lotus 123 for Windows: 2

### CHOOSE 4:

- BUSN 118 Introduction to Business: 3
- MGMT 223 Supervision: 3
- MGMT 225 Principles of Management: 3

**MINIMUM TOTAL**

51

**NOTES**

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.

<table>
<thead>
<tr>
<th>CABS 123</th>
<th>CABS 126</th>
<th>CABS 128</th>
<th>OADM 195</th>
<th>OADM 203</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lotus 123 for DOS</td>
<td>Excel</td>
<td>Lotus 123 for Windows</td>
<td>OADM 195</td>
<td>OADM 203</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ACGG 100</th>
<th>LEGL 215</th>
<th>CISB 200</th>
<th>OADM 203</th>
</tr>
</thead>
<tbody>
<tr>
<td>OADM 195</td>
<td>OADM 102</td>
<td>MATH 117</td>
<td>OADM 216</td>
</tr>
<tr>
<td>OADM 215</td>
<td>SPCH 110</td>
<td>OADM 200</td>
<td>OADM 220</td>
</tr>
<tr>
<td>WRIT 114</td>
<td>WRIT 127</td>
<td>OADM 275</td>
<td>OADM 240</td>
</tr>
<tr>
<td>Lim.Ch.2</td>
<td>Lim.Ch.2</td>
<td>Lim.Ch.3</td>
<td>Lim.Ch.4</td>
</tr>
</tbody>
</table>
EXECUTIVE SECRETARY
ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 10104 (Effective Fall 1997–Summer 2002)

An executive secretary coordinates the office functions of a particular executive's office within an organization. This person organizes tasks such as data entry, correspondence, client contact, and other operations; develops office procedures; and prepares reports of office activities. Graduates of this program are prepared to work in a variety of businesses and organizations in both the private and public sectors.

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 students may find it necessary to complete specific coursework 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

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
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</thead>
<tbody>
<tr>
<td>ACG 100</td>
<td>Accounting for Non-Majors</td>
<td>3</td>
</tr>
<tr>
<td>CISB 200</td>
<td>Information Systems Technology and Problem Solving</td>
<td>3</td>
</tr>
<tr>
<td>MATH 117</td>
<td>Math for Business</td>
<td>4</td>
</tr>
<tr>
<td>OADM 100</td>
<td>Editing Business Documents</td>
<td>2</td>
</tr>
<tr>
<td>OADM 110</td>
<td>Machine Transcription</td>
<td>3</td>
</tr>
<tr>
<td>OADM 114</td>
<td>College Speedwriting</td>
<td>4</td>
</tr>
<tr>
<td>OADM 195</td>
<td>Human Behavior in the Workplace</td>
<td>3</td>
</tr>
<tr>
<td>OADM 200</td>
<td>Critical Thinking</td>
<td>3</td>
</tr>
<tr>
<td>OADM 203</td>
<td>Professional Office Procedures</td>
<td>1</td>
</tr>
<tr>
<td>OADM 215</td>
<td>Records and Information Management I</td>
<td>3</td>
</tr>
<tr>
<td>OADM 230</td>
<td>Administrative Office Management</td>
<td>4</td>
</tr>
<tr>
<td>OADM 240</td>
<td>Office Internship</td>
<td>3</td>
</tr>
<tr>
<td>OADM 275</td>
<td>Cultural Differences in Business</td>
<td>3</td>
</tr>
<tr>
<td>SPCH 110</td>
<td>Oral Communication in the Workplace</td>
<td>3</td>
</tr>
<tr>
<td>WRIT 114</td>
<td>Business English</td>
<td>3</td>
</tr>
<tr>
<td>WRIT 127</td>
<td>Business Communications</td>
<td>3</td>
</tr>
</tbody>
</table>

LIMITED CHOICE REQUIREMENTS

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

CHOICE 2: Word Processing

6 Credits

Subchoice 2A: WordPerfect
CABS 105 WordPerfect for the Office/Intermediate Keyboarding
4
CABS 112 Advanced WordPerfect for the Office
4

Subchoice 2B: Microsoft Word
CABS 113 Microsoft Word for the Office/Intermediate Keyboarding
4
CABS 118 Advanced Microsoft Word for the Office
4

CHOICE 3: Spreadsheet

2 Credits

CABS 123 Lotus 123 for DOS
2
CABS 126 Excel
2
CABS 128 Lotus 123 for Windows
2

ELECTIVES

Complete the indicated number of credits in courses of your choice.

TOTAL: 4 CREDITS

MINIMUM TOTAL 62

NOTES
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.

<table>
<thead>
<tr>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACG 100</td>
<td>OADM 110</td>
<td>CISB 200</td>
<td>MATH 117</td>
</tr>
<tr>
<td>OADM 195</td>
<td>OADM 114</td>
<td>OADM 200</td>
<td>OADM 102</td>
</tr>
<tr>
<td>OADM 215</td>
<td>OADM 203</td>
<td>OADM 275</td>
<td>OADM 220</td>
</tr>
<tr>
<td>WRIT 114</td>
<td>WRIT 127</td>
<td>Lim.Ch.3</td>
<td>OADM 240</td>
</tr>
<tr>
<td>Lim.Ch.2</td>
<td>Lim.Ch.2</td>
<td>Elec.</td>
<td>SPCH 110</td>
</tr>
</tbody>
</table>
INFORMATION/WORD PROCESSING
ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 10106 (Effective Fall 1997–Summer 2002)

Word processors operate computers and/or terminals to enter, store, revise, and reproduce business documents and to help facilitate the flow of related office work. Information may be submitted as typed copy, handwritten copy, or as a recording. When personal computers are used, information may be received electronically via a wide- or local-area network.

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 students may find it necessary to complete specific coursework 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

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
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<tr>
<td>CABS 141</td>
<td>Business Graphics and Presentation</td>
<td>2</td>
</tr>
<tr>
<td>CABS 221</td>
<td>Advanced Desktop Publishing, Integration of Office Software</td>
<td>4</td>
</tr>
<tr>
<td>CISB 200</td>
<td>Information Systems Technology and Problem Solving</td>
<td>3</td>
</tr>
<tr>
<td>MATH 117</td>
<td>Math for Business</td>
<td>4</td>
</tr>
<tr>
<td>OADM 102</td>
<td>Editing Business Documents</td>
<td>3</td>
</tr>
<tr>
<td>OADM 110</td>
<td>Machine Transcription</td>
<td>3</td>
</tr>
<tr>
<td>OADM 195</td>
<td>Human Behavior in the Workplace</td>
<td>3</td>
</tr>
<tr>
<td>OADM 200</td>
<td>Critical Thinking</td>
<td>3</td>
</tr>
<tr>
<td>OADM 215</td>
<td>Records and Information Management I</td>
<td>3</td>
</tr>
<tr>
<td>OADM 220</td>
<td>Administrative Office Management</td>
<td>4</td>
</tr>
<tr>
<td>OADM 240</td>
<td>Office Internship</td>
<td>3</td>
</tr>
<tr>
<td>OADM 275</td>
<td>Cultural Differences in Business</td>
<td>3</td>
</tr>
<tr>
<td>SPCH 110</td>
<td>Oral Communication in the Workplace</td>
<td>3</td>
</tr>
<tr>
<td>WRIT 114</td>
<td>Business English</td>
<td>3</td>
</tr>
<tr>
<td>WRIT 127</td>
<td>Business Communications</td>
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LIMITED CHOICE REQUIREMENTS

<table>
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<tr>
<th>TOTAL: 12-13 CREDITS</th>
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</table>

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>CABS 105</td>
<td>Word Perfect for the Office/Intermediate Keyboarding</td>
</tr>
<tr>
<td>CABS 112</td>
<td>Advanced Word Perfect for the Office</td>
</tr>
<tr>
<td>CABS 113</td>
<td>Microsoft Word for the Office/Intermediate Keyboarding</td>
</tr>
<tr>
<td>CABS 116</td>
<td>Advanced Microsoft Word for the Office</td>
</tr>
<tr>
<td>CABS 123</td>
<td>Lotus 123 for DOS</td>
</tr>
<tr>
<td>CABS 133</td>
<td>Microsoft Access Database</td>
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<tr>
<td>CABS 142</td>
<td>Microsoft Excel</td>
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<tr>
<td>CABS 133</td>
<td>Microsoft Access Database</td>
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<tr>
<td>CABS 134</td>
<td>FoxPro Database - for Windows</td>
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</table>

ELECTIVES

Complete the indicated number of credits in courses of your choice.

MINIMUM TOTAL

TOTAL: 3 CREDITS

NOTES

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.

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<thead>
<tr>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>CABS 141</td>
<td>CABS 221</td>
<td>OADM 110</td>
<td>CABS 221</td>
</tr>
<tr>
<td>OADM 195</td>
<td>OADM 102</td>
<td>OADM 200</td>
<td>MATH 117</td>
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<td>OADM 215</td>
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<td>OADM 220</td>
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<td>WRIT 114</td>
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<td>SPCH 110</td>
<td>OADM 240</td>
</tr>
<tr>
<td>Lim.Ch.2</td>
<td>Lim.Ch.3</td>
<td>Lim.Ch.4</td>
<td>Elec</td>
</tr>
</tbody>
</table>
**INFORMATION/WORD PROCESSING CERTIFICATE OF ACHIEVEMENT**

Curriculum Code: 10149 (Effective Fall 1997-Summer 2002)

Certificate holders may qualify for entry-level/hands-on positions in this or a related area. Additional training will enhance an individual's employment and advancement 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 9 of this catalog.

**INFORMATION**

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

**REQUIREMENTS**

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
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</thead>
<tbody>
<tr>
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<td>2</td>
</tr>
<tr>
<td>CABS 221</td>
<td>Advanced Desktop Publishing, Integration of Office Software</td>
<td>4</td>
</tr>
<tr>
<td>OADM 102</td>
<td>Editing Business Documents</td>
<td>2</td>
</tr>
<tr>
<td>OADM 110</td>
<td>Machine Transcription</td>
<td>3</td>
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<tr>
<td>OADM 215</td>
<td>Records and Information Management I</td>
<td>3</td>
</tr>
<tr>
<td>WRIT 114</td>
<td>Business English</td>
<td>3</td>
</tr>
</tbody>
</table>

**LIMITED CHOICE REQUIREMENTS**

| TOTAL: 12-13 CREDITS |

**CHOICE 1:** Word Processing 8 Credits

**Subchoice 1A:** WordPerfect

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
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<tbody>
<tr>
<td>CABS 105</td>
<td>WordPerfect for the Office/Intermediate Keyboarding</td>
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</tr>
<tr>
<td>CABS 112</td>
<td>Advanced WordPerfect for the Office</td>
<td>4</td>
</tr>
</tbody>
</table>

**Subchoice 1B:** Microsoft Word

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
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</thead>
<tbody>
<tr>
<td>CABS 113</td>
<td>Microsoft Word for the Office/Intermediate Keyboarding</td>
<td>4</td>
</tr>
<tr>
<td>CABS 118</td>
<td>Advanced Microsoft Word for the Office</td>
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</tbody>
</table>

**CHOICE 2:** Spreadsheet 2 Credits

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
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<tbody>
<tr>
<td>CABS 123</td>
<td>Lotus 123 for DOS</td>
<td>2</td>
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<tr>
<td>CABS 126</td>
<td>Excel</td>
<td>2</td>
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<tr>
<td>CABS 128</td>
<td>Lotus 123 for Windows</td>
<td>2</td>
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**CHOICE 3:** Database 2-3 Credits

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<tbody>
<tr>
<td>CABS 133</td>
<td>Microsoft Access Database</td>
<td>2</td>
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<tr>
<td>CABS 134</td>
<td>FoxPro Database - for Windows</td>
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**ELECTIVES**

| TOTAL: 1 CREDIT |

Complete the indicated number of credits in courses of your choice.

**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 suggested course sequence should contact an academic advisor or counselor for help with adjustments.

<table>
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<tr>
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<tbody>
<tr>
<td>CABS 141</td>
<td>CABS 221</td>
</tr>
<tr>
<td>OADM 215</td>
<td>OADM 102</td>
</tr>
<tr>
<td>WRIT 114</td>
<td>OADM 110</td>
</tr>
<tr>
<td>Lim.Ch.1</td>
<td>Lim.Ch.1</td>
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<tr>
<td>Lim.Ch.2</td>
<td>Lim.Ch.1</td>
</tr>
<tr>
<td>Elec.</td>
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</table>

**AUTOMATED OFFICE SPECIALIST CERTIFICATE OF ACHIEVEMENT**

Curriculum Code: 10164 (Effective Fall 1997-Summer 2002)

This program is designed for the individual who may have previous secretarial or office education and experience, and who desires to update training and skills for the new automated office environment. Special emphasis is given to computer usage for word processing and other applications that will provide information within an administrative office position. Writing skills are also developed to improve communication.

**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 9 of this catalog.

**INFORMATION**

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

**REQUIREMENTS**

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<td>Microsoft PowerPoint/Windows</td>
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</tr>
<tr>
<td>CABS 221</td>
<td>Advanced Desktop Publishing, Integration of Office Software</td>
<td>4</td>
</tr>
<tr>
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<td>Information Systems Technology and Problem Solving</td>
<td>3</td>
</tr>
<tr>
<td>OADM 102</td>
<td>Editing Business Documents</td>
<td>2</td>
</tr>
<tr>
<td>OADM 110</td>
<td>Machine Transcription</td>
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</tr>
<tr>
<td>WRIT 114</td>
<td>Business English</td>
<td>3</td>
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**LIMITED CHOICE REQUIREMENTS**

| TOTAL: 12-13 CREDITS |

**CHOICE 1:** Word Processing 8 Credits

**Subchoice 1A:** WordPerfect

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<td>CABS 112</td>
<td>Advanced WordPerfect for the Office</td>
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**Subchoice 1B:** Microsoft Word

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<td>CABS 118</td>
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**CHOICE 2:** Spreadsheet 2 Credits

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</thead>
<tbody>
<tr>
<td>CABS 123</td>
<td>Lotus 123 for DOS</td>
<td>2</td>
</tr>
<tr>
<td>CABS 126</td>
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</tr>
<tr>
<td>CABS 128</td>
<td>Lotus 123 for Windows</td>
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**CHOICE 3:** Database 2 Credits

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<tr>
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</thead>
<tbody>
<tr>
<td>CABS 133</td>
<td>Microsoft Access Database</td>
<td>2</td>
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<tr>
<td>CABS 134</td>
<td>FoxPro Database - for Windows</td>
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**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 suggested course sequence should contact an academic advisor or counselor for help with adjustments.

<table>
<thead>
<tr>
<th>Code</th>
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<td>CABS 221</td>
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<tr>
<td>CABS 182</td>
<td>OADM 102</td>
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<td>CISR 200</td>
<td>OADM 110</td>
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<tr>
<td>WRIT 114</td>
<td>Lim.Ch.1</td>
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<td>Lim.Ch.1</td>
<td>Lim.Ch.3</td>
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</table>
LEGAL SECRETARY
ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 10207 (Effective Fall 1997–Summer 2002)

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 summaries, 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 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 students may find it necessary to complete specific coursework 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) 483-1922.

<table>
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<tr>
<td>CISB 200</td>
<td>Information Systems Technology and Problem Solving</td>
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<tr>
<td>LGL 215</td>
<td>Business Law I: Basic Principles</td>
</tr>
<tr>
<td>MATH 117</td>
<td>Math for Business</td>
</tr>
<tr>
<td>OADM 102</td>
<td>Editing Business Documents</td>
</tr>
<tr>
<td>OADM 110</td>
<td>Machine Transcription</td>
</tr>
<tr>
<td>OADM 195</td>
<td>Human Behavior in the Work Place</td>
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<tr>
<td>OADM 201</td>
<td>Critical Thinking</td>
</tr>
<tr>
<td>OADM 203</td>
<td>Professional Office Procedures</td>
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<tr>
<td>OADM 206</td>
<td>Legal Vocabulary and Forms Preparation</td>
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<tr>
<td>OADM 215</td>
<td>Records and Information Management I</td>
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<tr>
<td>OADM 220</td>
<td>Administrative Office Management</td>
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<tr>
<td>OADM 240</td>
<td>Office Internship</td>
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<tr>
<td>OADM 275</td>
<td>Cultural Differences in Business</td>
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<tr>
<td>SPCH 110</td>
<td>Oral Communication in the Workplace</td>
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<tr>
<td>WRIT 114</td>
<td>Business English</td>
</tr>
<tr>
<td>WRIT 127</td>
<td>Business Communications</td>
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LIMITED CHOICE REQUIREMENTS TOTAL: 8 CREDITS

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

CHOICE 1: General Education Core Areas (See Note 1) 6 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

CHOICE 2: Word Processing 6 Credits

Subchoice 2A: WordPerfect
- CAB 105 WordPerfect for the Office/Intermediate Keyboarding 4
- CAB 112 Advanced WordPerfect for the Office 4

Subchoice 2B: Microsoft Word
- CAB 113 Microsoft Word for the Office/Intermediate Keyboarding 4
- CAB 118 Advanced Microsoft Word for the Office 4

ELECTIVES TOTAL: 4 CREDITS

Complete the indicated number of credits in courses of your choice.

MINIMUM TOTAL 62
MEDICAL ADMINISTRATIVE ASSISTANT
ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 10185 (Effective Fall 1997–Summer 2002)

Medical administrative assistants may transcribe dictation, prepare correspondence, and assist physicians or medical scientists with reports, speeches, articles, and conference proceedings. They may take patient care histories, arrange for patients to be hospitalized, order supplies, prepare and send bills to patients, record appointments, and prepare medical charts and reports along with regular secretarial tasks. Graduates of this program may work in hospitals, HMOs, private practices, insurance companies, public health departments, and other health care settings.

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 6 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 students may find it necessary to complete specific coursework 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

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<tr>
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<td>ANAT 145</td>
<td>Introductory Anatomy and Physiology</td>
<td>4</td>
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<td>CHSE 111</td>
<td>Medical Insurance Billing I</td>
<td>3</td>
</tr>
<tr>
<td>CHSE 112</td>
<td>Medical Insurance Billing II</td>
<td>3</td>
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<tr>
<td>CISB 200</td>
<td>Information Systems Technology and Problem Solving</td>
<td>3</td>
</tr>
<tr>
<td>HUMS 265</td>
<td>Seminar: Ethical Issues in Medicine</td>
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<td>MATH 117</td>
<td>Math for Business</td>
<td>4</td>
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<td>OADM 102</td>
<td>Editing Business Documents</td>
<td>2</td>
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<tr>
<td>OADM 197</td>
<td>Medical Vocabulary</td>
<td>3</td>
</tr>
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<td>OADM 199</td>
<td>Medical Record Management</td>
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</tr>
<tr>
<td>OADM 207</td>
<td>Medical Transcription</td>
<td>3</td>
</tr>
<tr>
<td>OADM 220</td>
<td>Administrative Office Management</td>
<td>4</td>
</tr>
<tr>
<td>OADM 222</td>
<td>Advanced Medical Transcription</td>
<td>4</td>
</tr>
<tr>
<td>OADM 240</td>
<td>Office Internship</td>
<td>3</td>
</tr>
<tr>
<td>OADM 275</td>
<td>Cultural Differences in Business</td>
<td>3</td>
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<tr>
<td>SPCH 110</td>
<td>Oral Communication in the Workplace</td>
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<tr>
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<td>Business English</td>
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<tr>
<td>WRIT 127</td>
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LIMITED CHOICE REQUIREMENTS

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<td>ANAT 145</td>
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<td>CHSE 111</td>
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<td>CHSE 112</td>
<td>Medical Insurance Billing II</td>
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<tr>
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<td>HUMS 265</td>
<td>Seminar: Ethical Issues in Medicine</td>
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<td>MATH 117</td>
<td>Math for Business</td>
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<tr>
<td>OADM 102</td>
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<td>Medical Vocabulary</td>
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<td>OADM 199</td>
<td>Medical Record Management</td>
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<tr>
<td>OADM 207</td>
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<td>OADM 222</td>
<td>Advanced Medical Transcription</td>
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<td>WRIT 127</td>
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TOTAL: 57 CREDITS

NOTES
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.

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<td>OADM 275</td>
<td>WRIT 114</td>
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<td>Phi. Ch.</td>
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LIMITED CHOICE REQUIREMENTS

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<td>CARS 105</td>
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<td>Advanced WordPerfect for the Office</td>
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<td>CARS 113</td>
<td>Microsoft Word for the Office/Intermediate Keyboarding</td>
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</tr>
<tr>
<td>CARS 118</td>
<td>Advanced Microsoft Word for the Office</td>
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MINIMUM TOTAL: 65 CREDITS

142 • LANSING COMMUNITY COLLEGE CATALOG 1997–98
MEDICAL TRANSCRIPTIONIST
ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 10759 (Effective Fall 1997—Summer 2002)

Medical transcriptionists listen to doctors’ audio recordings and use word processors to transcribe what they hear into the proper printed format. Transcriptionists must be medical language specialists and be familiar with patient assessment, therapeutic procedures, diagnoses, and prognoses. In addition to transcribing letters, reports, and the like, they may have other clerical duties.

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 1 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 students may find it necessary to complete specific coursework 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

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<td>ANAT 151</td>
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<td>ANAT 152</td>
<td>Anatomy and Physiology II</td>
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<td>CISB 200</td>
<td>Information Systems Technology and Problem Solving</td>
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</tr>
<tr>
<td>MATH 117</td>
<td>Math for Business</td>
<td>4</td>
</tr>
<tr>
<td>OADM 102</td>
<td>Editing Business Documents</td>
<td>2</td>
</tr>
<tr>
<td>OADM 197</td>
<td>Medical Vocabulary</td>
<td>3</td>
</tr>
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<td>OADM 199</td>
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<td>General Pharmacology for Business</td>
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<tr>
<td>WRIT 127</td>
<td>Business Communications</td>
<td>3</td>
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</table>

LIMITED CHOICE REQUIREMENTS

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: 3
- Speech Communication Core Area: 3
- Science/Technology Core Area: 3
- Global Perspectives and Diversity Core Area: 3

CHOICE 2: Word Processing 6 Credits

Subchoice 2A: WordPerfect

- CABS 105 WordPerfect for the Office/Intermediate Keyboarding: 4
- CABS 112 Advanced WordPerfect for the Office: 4

Subchoice 2B: Microsoft Word

- CABS 113 Microsoft Word for the Office/Intermediate Keyboarding: 4
- CABS 118 Advanced Microsoft Word for the Office: 4

CHOICE 3: Medical Transcriptionist Related 3 Credits

- CHSE 111 Medical Insurance Billing: 3
- HUMS 265 Seminar: Ethical Issues in Medicine: 3

ELECTIVES

Complete the indicated number of credits in courses of your choice.

- MINIMUM TOTAL: 60

NOTES

1. 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.

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</table>

LANSING COMMUNITY COLLEGE CATALOG 1997—98 143
### OFFICE SKILLS TRAINING

**CERTIFICATE OF COMPLETION**

Curriculum Code: 10769 (Effective Fall 1997–Summer 2002)

Students completing this program are prepared for entry-level positions in an office. Training is focused on basic computer skills, editing documents, filing records, and general office procedures. Additional training will enhance an individual's employment and advancement 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 9 of this catalog.

**INFORMATION**

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

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>OADM 102</td>
<td>2</td>
</tr>
<tr>
<td>OADM 203</td>
<td>1</td>
</tr>
<tr>
<td>OADM 215</td>
<td>3</td>
</tr>
<tr>
<td>WRIT 114</td>
<td>3</td>
</tr>
</tbody>
</table>

**LIMITED CHOICE REQUIREMENTS**

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

<table>
<thead>
<tr>
<th>CHOICE 1:</th>
<th>Word Processing</th>
<th>4 Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CABS 105</td>
<td>WordPerfect for the Office/Intermediate Keyboarding</td>
<td>4</td>
</tr>
<tr>
<td>CABS 113</td>
<td>Microsoft Word for the Office/Intermediate Keyboarding</td>
<td>4</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>CHOICE 2:</th>
<th>Database Training</th>
<th>2–3 Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CABS 123</td>
<td>Microsoft Access Database</td>
<td>2</td>
</tr>
<tr>
<td>CABS 134</td>
<td>FoxPro Database - for Windows</td>
<td>3</td>
</tr>
</tbody>
</table>

**MINIMUM TOTAL**

15

**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.

OADM 102
OADM 203
OADM 215
WRIT 114
Lim.Ch.1
Lim.Ch.2

---

### OFFICE SUPPORT

**CERTIFICATE OF ACHIEVEMENT**

Curriculum Code: 10772 (Effective Fall 1997–Summer 2002)

An office support specialist is assigned various clerical duties in accordance with the office procedures of individual organizations and work units. Duties may include a combination of office machine operation, data entry, data retrieval, communication, and dealing with clients. Graduates of this program are prepared to work in a variety of businesses and organizations in a support capacity.

**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 9 of this catalog.

**INFORMATION**

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

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>CREDIT HOURS</th>
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</thead>
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<tr>
<td>ACCG 100</td>
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<tr>
<td>CABS 141</td>
<td>2</td>
</tr>
<tr>
<td>OADM 132</td>
<td>2</td>
</tr>
<tr>
<td>OADM 135</td>
<td>3</td>
</tr>
<tr>
<td>OADM 195</td>
<td>3</td>
</tr>
<tr>
<td>OADM 200</td>
<td>3</td>
</tr>
<tr>
<td>OADM 203</td>
<td>1</td>
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<tr>
<td>OADM 215</td>
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<td>OADM 260</td>
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<tr>
<td>WRIT 114</td>
<td>3</td>
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<tr>
<td>WRIT 127</td>
<td>3</td>
</tr>
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</table>

**LIMITED CHOICE REQUIREMENTS**

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

<table>
<thead>
<tr>
<th>CHOICE 1:</th>
<th>Word Processing</th>
<th>4 Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CABS 105</td>
<td>WordPerfect for the Office/Intermediate Keyboarding</td>
<td>4</td>
</tr>
<tr>
<td>CABS 113</td>
<td>Microsoft Word for the Office/Intermediate Keyboarding</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CHOICE 2:</th>
<th>Database</th>
<th>2–3 Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CABS 123</td>
<td>Microsoft Access Database</td>
<td>2</td>
</tr>
<tr>
<td>CABS 134</td>
<td>FoxPro Database - for Windows</td>
<td>3</td>
</tr>
</tbody>
</table>

**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.

<table>
<thead>
<tr>
<th>I</th>
<th>II</th>
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<tbody>
<tr>
<td>ACCG 100</td>
<td>OADM 102</td>
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<tr>
<td>CABS 141</td>
<td>OADM 200</td>
</tr>
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<td>OADM 195</td>
<td>OADM 215</td>
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<tr>
<td>OADM 203</td>
<td>OADM 240</td>
</tr>
<tr>
<td>WRIT 114</td>
<td>WRIT 127</td>
</tr>
<tr>
<td>Lim.Ch.1</td>
<td>Lim.Ch.2</td>
</tr>
</tbody>
</table>
**RECORDS MANAGEMENT**

**ASSOCIATE IN BUSINESS DEGREE**

Curriculum Code: 10195 (Effective Fall 1997–Summer 2002)

Records and information management specialists account for and control all of 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.

**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 students may find it necessary to complete specific coursework 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) 469-1522.

**REQUIREMENTS**

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
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<tr>
<td>ACGC 100</td>
<td>Practical Accounting for Non-Majors</td>
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<tr>
<td>CABS 141</td>
<td>Business Graphics and Presentation</td>
<td>2</td>
</tr>
<tr>
<td>CIS 200</td>
<td>Information Systems Technology and Problem Solving</td>
<td>3</td>
</tr>
<tr>
<td>LEGL 215</td>
<td>Business Law I, Basic Principles</td>
<td>3</td>
</tr>
<tr>
<td>MATH 117</td>
<td>Math for Business</td>
<td>4</td>
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<tr>
<td>OADM 102</td>
<td>Editing Business Documents</td>
<td>2</td>
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<tr>
<td>OADM 195</td>
<td>Human Behavior in the Workplace</td>
<td>3</td>
</tr>
<tr>
<td>OADM 200</td>
<td>Critical Thinking</td>
<td>3</td>
</tr>
<tr>
<td>OADM 215</td>
<td>Records and Information Management I</td>
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<tr>
<td>OADM 216</td>
<td>Records and Information Management II</td>
<td>4</td>
</tr>
<tr>
<td>OADM 220</td>
<td>Administrative Office Management</td>
<td>4</td>
</tr>
<tr>
<td>OADM 240</td>
<td>Office Internship</td>
<td>3</td>
</tr>
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<td>OADM 275</td>
<td>Cultural Differences in Business</td>
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<tr>
<td>SPC 110</td>
<td>Oral Communication in the Workplace</td>
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<tr>
<td>WRT 114</td>
<td>Business English</td>
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<tr>
<td>WRT 127</td>
<td>Business Communications</td>
<td>3</td>
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</table>

**LIMITED CHOICE REQUIREMENTS**

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
- Speech Communication Core Area
- Science/Technology Core Area
- Global Perspectives and Diversity Core Area

**CHOICE 2:** Word Processing  4 Credits

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
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<tbody>
<tr>
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</tr>
<tr>
<td>CABS 115</td>
<td>Microsoft Word for the Office/Intermediate Keyboarding</td>
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</table>

**CHOICE 3:** Spreadsheet  2 Credits

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
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<tbody>
<tr>
<td>CABS 125</td>
<td>Lotus 123 for DOS</td>
<td>2</td>
</tr>
<tr>
<td>CABS 126</td>
<td>Excel</td>
<td>2</td>
</tr>
<tr>
<td>CABS 128</td>
<td>Lotus 123 for Windows</td>
<td>2</td>
</tr>
</tbody>
</table>

**CHOICE 4:** Database  2–3 Credits

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CABS 133</td>
<td>Microsoft Access Database</td>
<td>2</td>
</tr>
<tr>
<td>CABS 134</td>
<td>FoxPro Database for Windows</td>
<td>3</td>
</tr>
</tbody>
</table>

**ELECTIVES**

Complete the indicated number of credits in courses of your choice.

**MINIMUM TOTAL**

61

**NOTES**

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 to courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

<table>
<thead>
<tr>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGC 100</td>
<td>OADM 102</td>
<td>LEGL 215</td>
<td>CABS 141</td>
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<tr>
<td>OADM 195</td>
<td>OADM 215</td>
<td>DADM 200</td>
<td>CIS 200</td>
</tr>
<tr>
<td>OADM 215</td>
<td>OADM 220</td>
<td>DADM 250</td>
<td>MATH 117</td>
</tr>
<tr>
<td>WRT 114</td>
<td>Lim.Ch.3</td>
<td>WRT 127</td>
<td>OADM 240</td>
</tr>
<tr>
<td>Lim.Ch.2</td>
<td>Lim.Ch.4</td>
<td>Elec.</td>
<td>SPC 110</td>
</tr>
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</table>

LANSING COMMUNITY COLLEGE CATALOG 1997-98 ▼ 145
PERFORMING ARTS

DANCE TRANSFER AND DANCE CAREER
ASSOCIATE IN APPLIED ARTS DEGREE

Curriculum Code: 1018 (Effective Fall 1997–Summer 2002)

This degree program provides solid technique and performance training for both
the transfer and the career student. Because public performance is a critical ele-
ment of a dancer’s training, the program provides a wide variety of performance
opportunities for its students, including fully produced formal concerts, video
dance production, lecture demonstrations, and informal performances. The Dance Ca-
reer option prepares students to work in such jobs as performer, teacher, and
dance studio owner. Not all courses in this program transfer to all colleges.
Students planning to transfer should see an academic advisor or counselor be-
fore 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 advis-
ing information may be found on page 8 of this catalog.

GENERAL EDUCATION
General education is an important part of this program and includes a mathemat-
ics competency requirement. To fulfill the mathematics competency requirement,
some students may find it necessary to complete specific coursework in math-
ematics. 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 225, telephone number (517) 483-1018.

REQUIREMENTS

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>TOTAL: 31 CREDITS</th>
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<tr>
<td>CODE</td>
<td>TITLE</td>
</tr>
<tr>
<td>DANC 123</td>
<td>Choreography</td>
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<tr>
<td>DANC 124</td>
<td>Dance Improvisation</td>
</tr>
<tr>
<td>DANC 191</td>
<td>Dance History</td>
</tr>
<tr>
<td>DANC 193</td>
<td>Dance Anatomy</td>
</tr>
<tr>
<td>ISC 121</td>
<td>Integrated Science for Education I</td>
</tr>
<tr>
<td>MUSC 199</td>
<td>Music Appreciation</td>
</tr>
<tr>
<td>SOCL 120</td>
<td>Introduction to Sociology</td>
</tr>
<tr>
<td>SPCH 120</td>
<td>Dynamics of Communication</td>
</tr>
<tr>
<td>THEA 110</td>
<td>Introduction to Theatre</td>
</tr>
<tr>
<td>WRIT 121</td>
<td>Composition I</td>
</tr>
</tbody>
</table>

LIMITED CHOICE REQUIREMENTS (See Notes 1 and 2) TOTAL: 34.5–38 CREDITS

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

CHOICE 1: General Education Core Areas (See Note 3) 0 Credits
(See the GENERAL EDUCATION section above)
- Writing Core Area
- Speech Communication Core Area
- Social/Technology Core Area
- Global Perspectives and Diversity Core Area

CHOICE 2: Career OR Transfer (Choose 1 Subchoice) 34.5–38 Credits
Subchoice 2A: Career Requirements
- Ballet Technique Classes (See Note 4)
- Modern Technique Classes (See Note 5)
- Related Professional Technique Classes (See Note 6)
- Repertory/Performance Classes (See Notes 7 and 8)
Subchoice 2B: Transfer Requirements
- Ballet Technique Classes (See Note 4)
- Modern Technique Classes (See Note 5)
- Related Professional Technique Classes (See Note 6)
- Repertory/Performance Classes (See Notes 7 and 8)
- English Composition (See Note 9)
- Humanities (See Note 9)
- Social Science (See Note 9)

MINIMUM TOTAL 65.5

NOTES
1. Specific dance technique courses must be selected with the guidance of a
dance program advisor. Technique courses can be repeated for credit until
proficiency is achieved.
2. Those students who plan on attending a school in Michigan should include
an additional four-credit course in: 1) Science or Mathematics and 2) Social
Science to complete all general education requirements.
3. Students completing REQUIREMENTS have fulfilled the requirements for
these Core areas.
4. Choose from DANC courses numbered 101, 111, 201, 211, or 244.
5. Choose from DANC courses numbered 102, 112, 202, or 212.
6. Choose from DANC courses numbered 103, 104, 113, 114, 132, 134, 203, or
204.
7. Repertory/Performance courses may be repeated for credit. Dance Rep-
ertory may be repeated a maximum of two (2) times for credit.
8. Choose from DANC courses numbered 161 through 165.
9. See the MACRAO Transfer Agreement in the “Transfer Information” section
of this catalog for appropriate English Composition, Humanities, and Social
Science courses.

SUGGESTED COURSE SEQUENCE
Students should see course descriptions to find cut when departments plan to
offer courses. Students who for any reason are unable to follow the course se-
quence 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.
MUSIC COMMERCIAL PERFORMANCE ASSOCIATE IN APPLIED ARTS DEGREE

Curriculum Code: 10274 (Effective Fall 1997–Summer 2002)

The Music Commercial Performance 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 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 students may need to complete specific coursework 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) 483-1368 or the LCC Admissions Office, Room 232, Gannon Vocational Technical Center, telephone number (517) 483-1254.

REQUIREMENTS FOR ADMISSION TO THE MUSIC COMMERCIAL PERFORMANCE PROGRAM
Curriculum Code: 10272

In order to be considered as a candidate for this program, students must complete the following requirements:

a. Submit high school transcript or GED and all college transcripts.

b. Interview with Performing Arts advisor to discuss curriculum requirements. Report requirements for the audition pertaining to their specific instrument will be described in detail.

c. 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 PERFORMANCE PROGRAM REQUIREMENTS
Curriculum Code: 10274

<table>
<thead>
<tr>
<th>REQUIREMENTS FOR ADMISSION</th>
<th>TOTAL: 55 CREDITS</th>
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<tbody>
<tr>
<td>HUMS 213 World Civilizations I</td>
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<tr>
<td>MUSC 257 Synthesizers and Computer Music</td>
<td>2</td>
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<tr>
<td>SPCH 120 Dynamics of Communication</td>
<td>3</td>
</tr>
<tr>
<td>THEA 120 Introduction to Acting</td>
<td>2</td>
</tr>
<tr>
<td>WRIT 121 Composition I</td>
<td>4</td>
</tr>
</tbody>
</table>

LIMITED CHOICE REQUIREMENTS

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

CHOICE 1:

General Education Core Areas (See Note 1) 0 Credits

Writing Core Area
Speech Communication Core Area
Science/Technology Core Area
Global Perspectives and Diversity Core Area

CHOICE 2:

History 4 Credits
MUSIC 245 Jazz History
MUSIC 248 Rock History I - Blues to the British Invasion
MUSIC 249 Rock History II - From 1963 to Present
MUSIC 251 Blues History

CHOICE 3:

Choice for Piano or Guitar Class 1-2 Credits
MUSIC 199 Class Piano Major II
MUSIC 270 Rock Guitar I

CHOICE 4:

Private Lessons Commercial (See Note 2) 6 Credits
MUSIC 157 Applied Lesson I
MUSIC 257 Applied Lesson II
MUSIC 258 Applied Lesson IV

CHOICE 5:

Ensembles and Voice (Choose 1 Subchoice) 4 Credits
Subchoice 5A: Voice Requirements (See Note 2)
MUSIC 108 Concert Choir
MUSIC 119 Landing Concert Band
MUSIC 123 Jazz Ensemble

MINIMUM TOTAL 72

NOTES
1. Students completing REQUIREMENTS have fulfilled the requirements for these Core Areas.
2. Courses may be repeated and must be taken each semester student is enrolled as a major for a total of four credits.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out how 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.
MUSIC TRANSFER
ASSOCIATE IN APPLIED ARTS DEGREE

Curriculum Code: 10270 (Effective Fall 1997–Summer 2002)

The Music Transfer 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 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 students may find it necessary to complete specific coursework 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) 483-1818 or the LCC Admissions Office, Room 232, Gannon Vocational Technical Center, telephone number (517) 483-1254.

REQUIREMENTS FOR ADMISSION TO THE MUSIC TRANSFER PROGRAM
Curriculum Code: 10270

In order to be considered as a candidate for this program, students must complete the following requirements:

a. Submit high school transcript or GED and all college transcripts.
b. Interview with Performing Arts advisor to discuss curriculum requirements. Repertoire requirements for the audition pertaining to their specific instrument will be described in detail.
c. 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 TRANSFER PROGRAM REQUIREMENTS
Curriculum Code: 10270

<table>
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<th>REQUIREMENTS</th>
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<td>CORE</td>
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<tr>
<td>ENGL 122</td>
<td>Writing about Literature and Ideas</td>
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<tr>
<td>HUMS 213</td>
<td>World Civilizations I</td>
</tr>
<tr>
<td>HUMS 214</td>
<td>World Civilizations II</td>
</tr>
<tr>
<td>ISCI 121</td>
<td>Integrated Science for Education I</td>
</tr>
<tr>
<td>ISCI 122</td>
<td>Integrated Science for Education II</td>
</tr>
<tr>
<td>MUSC 138</td>
<td>Class Piano Major I</td>
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<td>MUSC 139</td>
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<td>MUSC 173</td>
<td>Basic Musicanship I</td>
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<tr>
<td>SPCH 120</td>
<td>Dynamics of Communication</td>
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<tr>
<td>WRIT 121</td>
<td>Composition I</td>
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</table>

LIMITED CHOICE REQUIREMENTS

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
Speech Communication Core Area
Science/Technology Core Area
Global Perspectives and Diversity Core Area

CHOICE 2: Private Lessons (See Note 2) 8 Credits
MUSC 157 Applied Lesson I
MUSC 158 Applied Lesson II
MUSC 257 Applied Lesson III
MUSC 258 Applied Lesson IV

CHOICE 3: Ensembles and Voice (Choose 1 Subchoice) 4-8 Credits

Subchoice 3A: Voice Requirements
MUSC 108 Concert Choir (See Note 2) 1
MUSC 179 Class Voice Major I 1
MUSC 180 Class Voice Major II 1

Subchoice 3B: Instrumental Requirements
MUSC 119 Lansing Concert Band (See Note 2) 1

MINIMUM TOTAL

67

NOTES
1. Students completing REQUIREMENTS have fulfilled the requirements for these Core areas.
2. Course may be repeated and must be taken each semester student is enrolled as a major.

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.

<table>
<thead>
<tr>
<th>I</th>
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<tbody>
<tr>
<td>ISCI 121</td>
<td>ENGL 122</td>
<td>HUMS 213</td>
<td>HUMS 214</td>
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<td>MUSC 138</td>
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<td>MUSC 273</td>
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<td>MUSC 174</td>
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146 ■ LANSING COMMUNITY COLLEGE CATALOG 1997–98
THEATRE - ACTING TRANSFER
ASSOCIATE IN APPLIED ARTS DEGREE

Curriculum Code: 10278 (Effective Fall 1997–Summer 2002)

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: Stanislavsky 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 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 students may find it necessary to complete specific coursework 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: 53.5 CREDITS

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<tr>
<td>ENGL 122</td>
<td>Writing about Literature and Ideas</td>
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<tr>
<td>ISCI 121</td>
<td>Integrated Science for Education I</td>
<td>4</td>
</tr>
<tr>
<td>POLS 120</td>
<td>American Political System</td>
<td>4</td>
</tr>
<tr>
<td>SPCH 120</td>
<td>Dynamics of Communication</td>
<td>3</td>
</tr>
<tr>
<td>THEA 110</td>
<td>Introduction to Theatre</td>
<td>3</td>
</tr>
<tr>
<td>THEA 111</td>
<td>Production Practicum</td>
<td>2</td>
</tr>
<tr>
<td>THEA 116</td>
<td>Design Practicum I</td>
<td>3</td>
</tr>
<tr>
<td>THEA 120</td>
<td>Introduction to Acting</td>
<td>2</td>
</tr>
<tr>
<td>THEA 131</td>
<td>Studio Theatre Performance I</td>
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</tr>
<tr>
<td>THEA 132</td>
<td>Studio Theatre Performance II</td>
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<tr>
<td>THEA 141</td>
<td>Acting I - Contemporary</td>
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<td>THEA 142</td>
<td>Acting II - Classics</td>
<td>2.5</td>
</tr>
<tr>
<td>THEA 171</td>
<td>Dramatic Form and Function I</td>
<td>3</td>
</tr>
<tr>
<td>THEA 172</td>
<td>Dramatic Form and Function II</td>
<td>3</td>
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<tr>
<td>THEA 181</td>
<td>Improvisation</td>
<td>2.5</td>
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<tr>
<td>THEA 210</td>
<td>Theatre History</td>
<td>3</td>
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<tr>
<td>THEA 233</td>
<td>Studio Theatre Performance III</td>
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<tr>
<td>THEA 251</td>
<td>Stage Voice for the Actor</td>
<td>3</td>
</tr>
<tr>
<td>THEA 261</td>
<td>Movement for the Actor</td>
<td>2</td>
</tr>
<tr>
<td>WRIT 121</td>
<td>Composition I</td>
<td>4</td>
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</tbody>
</table>

LIMITED CHOICE REQUIREMENTS (See Note 2) TOTAL: 15–15.5 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 3) | 0 |
| Speech Communication Core Area (See Note 3) | 0 |
| Science/Technology Core Area (See Note 3) | 0 |
| Global Perspectives and Diversity Core Area | 3 |

CHOICE 2: Theatre (Choose 1 Subchoice) 8–8.5 Credits

Subchoice 2A
THEA 235 Studio Theatre Performance V 2
THEA 241 Acting I - Creating Theatre 2.5
THEA 271 Dramatic Form and Function III 3
THEA 281 Advanced Improvisation 1

Subchoice 2B (See Note 4)
THEA 235 Theatre Special Projects 2
THEA 255 Acting Styles I 2
THEA 296 Acting Styles Performance 2

CHOICE 3: Humanities 4 Credits

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<td>HUMS 211</td>
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<td>HUMS 212</td>
<td>History of Art II</td>
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<tr>
<td>HUMS 213</td>
<td>World Civilizations I</td>
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</tr>
<tr>
<td>HUMS 214</td>
<td>World Civilizations II</td>
<td>4</td>
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</table>

MINIMUM TOTAL 68.5

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 Coro area.
4. Subchoice 2B can only be selected through an audition process for a musical production.
5. Choose from DANG courses numbered 161 through 164.

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.

| THEA 110 | ENGL 122 | ISCI 121 | SPCH 120 |
| THEA 120 | POLS 120 | THEA 161 | Lim. Ch. 2 |
| THEA 131 | THEA 111 | THEA 210 | Lim. Ch. 3 |
| THEA 141 | THEA 116 | THEA 233 |
| THEA 171 | THEA 132 | THEA 251 |
| WRIT 121 | THEA 142 | THEA 261 |
| THEA 172 | Lim. Ch. 1 |
PHOTOGRAPHIC IMAGING

ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 10277 (Effective Fall 1997-Summer 2002)

The field of photography is vast and diverse with employment opportunities in "still," "moving," and combinations of both types of image making. 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 other problem-solving concepts related to the communication standards of the chosen field. 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 Class Schedule for course prerequisite information. Basic skills assessment and advising information may be found on page 6 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 students may find it necessary to complete specific coursework 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) 493-1673.

REQUIREMENTS

<table>
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<tr>
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<td>Computer Graphics for Photography</td>
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<tr>
<td>IMAG 111</td>
<td>Introduction to Photographic Technology I</td>
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<tr>
<td>IMAG 112</td>
<td>Design Fundamentals for Imaging Technologies</td>
<td>3</td>
</tr>
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<td>IMAG 113</td>
<td>Lighting Concepts and Applications</td>
<td>3</td>
</tr>
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<td>IMAG 114</td>
<td>Introduction to Photographic Color Technology</td>
<td>3</td>
</tr>
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<td>IMAG 121</td>
<td>Imaging Technology</td>
<td>2</td>
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<tr>
<td>IMAG 224</td>
<td>Emerging Image Technologies I</td>
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<tr>
<td>IMAG 230</td>
<td>Imaging Technology Major I</td>
<td>3</td>
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<tr>
<td>IMAG 231</td>
<td>Imaging Technology Major II</td>
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<td>IMAG 234</td>
<td>Portfolio Assembly and Degree Completion Activities</td>
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<td>SDEV 139</td>
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LIMITED CHOICE REQUIREMENTS

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<td>IMAG 224</td>
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<td>IMAG 230</td>
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<tr>
<td>SDEV 139</td>
<td>Job Search Skills</td>
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LIMITED CHOICE REQUIREMENTS:

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

CHOICE 1: General Education Core Area

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

CHOICE 2: Specialization (Choose 1 Subchoice)

23 Credits

Subchoice 2A: Still Image Emphasis

IMAG 115 | Color Directed Study          | 1            |
IMAG 117 | Introduction to Photographic Technology II | 4        |
IMAG 220 | Intermediate Still Imaging Technology | 4        |
IMAG 221 | Advanced Still Imaging Technology | 4        |
IMAG 222 | Intermediate Color Applications and Technology | 2       |
IMAG 223 | Advanced Color Applications and Technology | 4        |
IMAG 233 | The Business of Photography: Practices and Directions | 3       |
IMAG 226 | Film Production II            | 4            |
IMAG 227 | Film Production III           | 4            |
MTEC 120 | Audio Production I            | 4            |
MTEC 151 | Electronic Field Production I | 4            |

ELECTIVES

TOTAL: 9 CREDITS

Complete the indicated number of credits in courses of your choice.

MINIMUM TOTAL

71

NOTES

1. For students completing all requirements for this program (including IMAG 114), the Science/Technology Core Area requirement is waived.
2. Students completing this curriculum have the option of doing so through a three-year, full-time sequence of courses or through part-time enrollment over a longer period. The full-time sequence begins Fall Semester only. Part-time students may begin their studies any semester.
3. For graduation, a student must have earned a minimum grade of 2.0 in all courses taken to satisfy the course credits required in this curriculum.
4. 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.

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.

Still Image Emphasis

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<tr>
<td>IMAG 111</td>
<td>IMAG 114</td>
<td>ARTS 17</td>
<td>IMAG 221</td>
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<td>IMAG 112</td>
<td>IMAG 115</td>
<td>IMAG 121</td>
<td>IMAG 223</td>
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<td>IMAG 117</td>
<td>IMAG 220</td>
<td>IMAG 224</td>
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Moving Image Emphasis

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<td>IMAG 111</td>
<td>IMAG 114</td>
<td>ARTS 17</td>
<td>IMAG 223</td>
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<td>IMAG 112</td>
<td>IMAG 226</td>
<td>IMAG 121</td>
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<td>IMAG 113</td>
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150 • LANSING COMMUNITY COLLEGE CATALOG 1997–98
QUALITY ASSURANCE
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 10206 (Effective Fall 1997-Summer 2002)

Quality assurance is an established field utilizing the application of management principles, problem solving, planning, and statistical techniques to produce high quality products or services. The quality assurance program offers students the opportunity to develop skills required for a career in quality with an emphasis in technical quality areas. Students will study areas such as probability and statistics, control charts, problem solving, metrology, quality improvement teams, quality planning and systems management, cost of quality, sampling, reliability, applied statistics and experimental design. This program provides excellent preparation for students to pursue certification through the American Society for Quality Control (ASQ) as a Certified Quality Technician, Certified Quality Engineer, Certified Quality Manager, Certified Quality Auditor, or Certified Reliability Engineer.

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 students may find it necessary to complete specific coursework 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 222, telephone number (517) 483-1318.

<table>
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<tr>
<td>QUAL 103 Probability and Statistics for Quality Assurance</td>
<td>4</td>
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<tr>
<td>QUAL 104 Process Control Charting</td>
<td>3</td>
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<td>QUAL 107 Problem Solving Techniques</td>
<td>3</td>
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<tr>
<td>QUAL 105 Metrology</td>
<td>4</td>
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<tr>
<td>QUAL 200 Quality Improvement Teams</td>
<td>4</td>
</tr>
<tr>
<td>QUAL 203 Quality Planning and Systems Management</td>
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<tr>
<td>QUAL 205 Cost of Quality</td>
<td>3</td>
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<td>QUAL 209 Reliability</td>
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<td>QUAL 212 Applied Statistics for Quality Assurance</td>
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<tr>
<td>QUAL 215 Experimental Design in Quality Assurance</td>
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LIMITED CHOICE REQUIREMENTS
Complete the indicated number of credits from each CHOICE listed below.

| CHOICE 1: General Education Core Areas | 12 Credits |
| Writing Core Area | 3 |
| Speech Communication Core Area | 3 |
| Science/Technology Core Area | 3 |
| Global Perspectives and Diversity Core Area | 3 |

| CHOICE 2: Additional Quality Assurance Courses | 6 Credits |
| QUAL 121 Introduction to Statistical Process Control | 3 |
| QUAL 124 Quality Service and Customer Satisfaction | 3 |
| QUAL 224 Supervisory Skills for Quality | 3 |
| QUAL 259 Project Management | 3 |

| CHOICE 3: Mathematics | 8 Credits |
| MATH 112 Intermediate Algebra | 4 |
| MATH 121 College Algebra I | 4 |
| MATH 122 College Algebra II and Trigonometry | 3 |
| MATH 125 College Algebra and Trigonometry | 5 |

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.

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<tr>
<th>I</th>
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<tbody>
<tr>
<td>QUAL 101</td>
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</table>

LANSING COMMUNITY COLLEGE CATALOG 1997-98 151
QUALITY MANAGEMENT
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 10246 (Effective Fall 1997–Summer 2002)

Quality management is an area of study which focuses on the managerial principles and statistical techniques that are necessary to continuously improve organizational effectiveness and ensure the delivery of high-quality products and services. The quality management program offers students the opportunity to develop skills required for a career in quality with an emphasis in management areas. Students will study areas such as accounting, general business, international business, organizational development, probability and statistics, control charts, problem solving, quality improvement teams, quality planning and systems management, cost of quality, applied statistics, and experimental design. This program provides excellent preparation for students to pursue certification through the American Society for Quality Control (ASQC) as a Certified Quality Technician or Manager.

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 students may find it necessary to complete specific coursework 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 220, telephone number (517) 483-1336.

REQUIREMENTS

Code : TITLE
ACCG 101 : Accounting Information for Management 3
BUSN 116 : Introduction to Business 3
BUSN 291 : International Business 3
MGMT 304 : Organizational Development 3
QUAL 100 : Introduction to Quality Assurance 3
QUAL 103 : Probability and Statistics for Quality Assurance 4
QUAL 104 : Process Control Charting 3
QUAL 107 : Problem Solving Techniques 3
QUAL 200 : Quality Improvement Teams 4
QUAL 203 : Quality Planning and Systems Management 4
QUAL 205 : Cost of Quality 3
QUAL 212 : Applied Statistics for Quality Assurance 4
QUAL 215 : Experimental Design in Quality Assurance 4

TOTAL: 44 CREDITS

LIMITED CHOICE REQUIREMENTS

Complete the indicated number of credits from each choice listed below.

CHOICE 1: General Education Core Areas

(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

CHOICE 2: Additional Related Courses

- MGMT 223 : Supervision 3
- MGMT 224 : Human Resource Management 3
- MGMT 225 : Principles of Management 3
- MGMT 228 : Organizational Behavior 3
- QUAL 115 : Metrology 4
- QUAL 121 : Introduction to Statistical Process Control 3
- QUAL 124 : Quality Service and Customer Satisfaction 3
- QUAL 209 : Reliability 3
- QUAL 224 : Supervisory Skills for Quality 3
- QUAL 239 : Project Management 3

TOTAL: 21 CREDITS

MINIMUM TOTAL 55

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.
REAL ESTATE

PROPERTY VALUATION AND ASSESSMENT ADMINISTRATION
ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 10125 (Effective Fall 1997–Summer 2002)

Property valuation/assessment administrators are specialists trained to ascertain the value and proper use of real property for taxation purposes. They may also do appraisals of buildings and property values for private and public parties. LCD graduates of this program are prepared to work in an assessor's office, an equalization department, or a private appraisal firm.

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 students may find it necessary to complete specific coursework 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

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LIMITED CHOICE REQUIREMENTS

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

CHOICE 2: Accounting
- ADDG 101: Accounting Information for Management 3
- ADDG 210: Principles of Accounting I 4

CHOICE 3: Real Estate
- REAL 271: Introduction to Real Estate 2
- REAL 274: Real Estate License Exam 3

CHOICE 4: Valuation/Assessment Related
- ADDG 211: Principles of Accounting II 4
- CIVL 120: Surveying 4
- ECON 202: Principles of Economics - Macro 3
- GEOG 121: Physical Geography 3
- MATH 117: Math for Business 4
- MKTG 200: Principles of Marketing 3

PVAA 286: Applied Appraisal Concepts I 1
PVAA 287: Applied Appraisal Concepts II 1
PVAA 288: Income Approach to Value I 2
PVAA 289: Income Approach to Value II 2
REAL 273: Real Estate Investment 3
REAL 275: Real Estate Financing 3
REAL 277: Property Management 3
REAL 278: Real Estate Inspection and Construction 3
REAL 279: Residential Appraisal 3
REAL 280: Real Estate Law 3

CHOICE 5: Computer Related (See Note 2) 4-5 Credits

MINIMUM TOTAL 60

NOTES
1. Students completing REQUIREMENTS have fulfilled the requirements for these Core areas.
2. 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.

PROPERTY VALUATION AND ASSESSMENT ADMINISTRATION CERTIFICATE OF COMPLETION

Curriculum Code: 10144 (Effective Fall 1997–Summer 2002)

Certificate holders qualify for certification testing and entry-level positions, or may improve opportunities for advancement in this or a related area.

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MINIMUM TOTAL 12

SUGGESTED COURSE SEQUENCE

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<td>PVAA 284</td>
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LANSING COMMUNITY COLLEGE CATALOG 1997–98 153
### REAL ESTATE
#### ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 10139 (Effective Fall 1997–Summer 2002)

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 leases 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 Class Schedule for course prerequisite information. Basic skills assessment and advising information may be found on page 4 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 students may find it necessary to complete specific coursework 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

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<td>Marketing and Managing Your Professional Image</td>
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### LIMITED CHOICE REQUIREMENTS

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

#### CHOICE 1: General Education Core Areas

(See the GENERAL EDUCATION section above)

| Writing Core Area | 0 Credits |
| Speech Communication Core Area | 0 Credits |
| Science/Technology Core Area | 0 Credits |
| Global Perspectives and Diversity Core Area | 0 Credits |

#### CHOICE 2: Accounting

| ACCG 100 | Practical Accounting for Non-Majors                     | 3–4 Credits |
| ACCG 101 | Accounting Information for Management                   | 3–4 Credits |
| ACCG 210 | Principles of Accounting I                              | 3–4 Credits |

#### CHOICE 3: Real Estate Related

(See Note 2) 14 Credits

| ARCH 100 | Introduction to Architecture                           | 3            |
| BLDT 100 | Introduction to Construction                           | 3            |
| BUSN 116 | Introduction to Business                               | 3            |
| BUSN 228 | Public Relations                                       | 2            |
| 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 | Business Law III. Business Organizations               | 3            |
| LEGL 221 | Real Estate Transaction                                | 3            |
| MATH 117 | Math for Business                                      | 4            |

| MGMT 203 | Supervision                                             | 3            |
| MGMT 225 | Principles of Management                               | 3            |
| MGMT 228 | Organizational Behavior                                | 3            |
| MGMT 239 | Time and Stress Management                             | 3            |
| MKTG 140 | Introduction to Advertising                            | 3            |
| REAL 271 | Introduction to Real Estate                            | 2            |
| REAL 278 | Real Estate Inspection and Construction                | 3            |

#### CHOICE 4: Computer Related

(See Note 3) 4–5 Credits

### MINIMUM TOTAL

50 Credits

### NOTES

1. Students completing REQUIREMENTS have fulfilled the requirements for these Core areas.
2. Students may also choose Property Valuation and Assessment Administration courses PVAA 281 through PVAA 284.
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.

| MKTG 119 | MKTG 120 | MKTG 200 | CABS 200 |
| MKTG 274 | REAL 275 | REAL 277 | REAL 277 |
| WRIT 127 | Lim.Ch. | Lim.Ch. | Lim.Ch. |
| Lim.Ch. | Lim.Ch. | Lim.Ch. |

### REAL ESTATE CERTIFICATE OF COMPLETION

Curriculum Code: 10148 (Effective Fall 1997–Summer 2002)

Certificate holders may improve their opportunities for advancement in this or a related area. Additional education enhances an individual's employment opportunities.

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<td>Real Estate Law</td>
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### LIMITED CHOICE REQUIREMENTS

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

#### CHOICE 1: Real Estate Basics

(5–6 Credits)

| MKTG 119 | Marketing and Managing Your Professional Image    | 3            |
| REAL 271 | Introduction to Real Estate                              | 2            |
| REAL 274 | Real Estate License Exam                                | 3            |
| REAL 277 | Property Management                                     | 3            |

### MINIMUM TOTAL

20 Credits

### SUGGESTED COURSE SEQUENCE

| MKTG 123 | REAL 273 |
| REAL 275 | REAL 280 |
| REAL 279 | Lim.Ch. |
CHEMICAL TECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 10163 (Effective Fall 1997–Summer 2002)

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 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 students may find it necessary to complete specific coursework 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) 483-1052.

REQUIREMENTS

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<td>CNCP 101</td>
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TOTAL: 59 CREDITS

LIMITED CHOICE REQUIREMENTS

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

CHOICE 1: General Education Core Areas (See Note 1) 9 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

CHOICE 2: Humanities (See Note 2) 8 Credits

CHOICE 3: Social Science (See Note 2) 4 Credits

MINIMUM TOTAL 71

NOTES
1. Students completing REQUIREMENTS have fulfilled the requirements for these Core areas.
2. See the MACRAO Transfer Agreement in the “Transfer Information” section of this catalog for appropriate Social Science and Humanities courses.

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.
MOLECULAR BIOTECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 10212 (Effective Fall 1997–Summer 2002)

Graduates of this program will be able to work in areas that improve the quality of human life, such as the problems of human genetic defects and cancer, increased crop production, and cleanup of environmental pollution. This is a laboratory-intensive curriculum which focuses on the wide-ranging applications of recombinant DNA technology. Near the end of the program the Science Department will make every effort to arrange for summer internships in industrial or university research laboratories for students who wish to gain additional experience. If you plan to transfer to a four-year school, see an academic advisor or counselor before enrolling.

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 students may find it necessary to complete specific coursework 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

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TOTAL: 54 CREDITS

LIMITED CHOICE REQUIREMENTS

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TOTAL: 16–17 CREDITS

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

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CHOICE 2: Humanities (See Note 2)

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CHOICE 3: Social Science (See Note 2)

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CHOICE 4: Mathematics

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| MATH 121 | College Algebra I | 4 |
| MATH 126 | College Algebra and Trigonometry | 5 |

MINIMUM TOTAL: 70

NOTES

1. Students completing REQUIREMENTS have fulfilled the requirements for those Core areas.

2. See the MACRAO Transfer Agreement in the "Transfer Information" section of this catalog for appropriate Social Science and Humanities 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 consult an academic advisor or counselor for help with adjustments.

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156 | LANSING COMMUNITY COLLEGE CATALOG 1997–98
**VETERINARY TECHNOLOGY**  
**ASSOCIATE IN APPLIED SCIENCE DEGREE**

Curriculum Code: 10287 (Effective Fall 1997–Summer 2002)

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. This curriculum is intended for students who have been admitted to the joint LCC/MSU Veterinary Technology Program. Admission is by application only.

**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 students may find it necessary to complete specific coursework 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) 483-1002 or the MSU Department of Veterinary Technology at (517) 355-7267.

### REQUIREMENTS

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>CHEME 151</td>
<td>General Chemistry Lecture I</td>
<td>4</td>
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<tr>
<td>CHEME 161</td>
<td>General Chemistry Laboratory I</td>
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<tr>
<td>MIRC 203</td>
<td>Microbiology</td>
<td>3</td>
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<tr>
<td>MIRC 204</td>
<td>Microbiology Laboratory</td>
<td>1</td>
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<tr>
<td>SPCH 120</td>
<td>Dynamics of Communication</td>
<td>3</td>
</tr>
<tr>
<td>WRIT 121</td>
<td>Composition I</td>
<td>4</td>
</tr>
</tbody>
</table>

**LIMITED CHOICE REQUIREMENTS**

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

**CHOICE 1:** General Education Core Areas  
(See the GENERAL EDUCATION section above)  
3-4 Credits

- Writing Core Area (See Note 1)  
- Speech Communication Core Area (See Note 1)  
- Science/Technology Core Area (See Note 1)  
- Global Perspectives and Diversity Core Area  

**CHOICE 2:** Math Requirement  
4-5 Credits

- MATH 121 College Algebra I  
- MATH 126 College Algebra and Trigonometry  

**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.

**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.

<table>
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<tr>
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<td>MIRC 203</td>
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<tr>
<td>CHEM 161</td>
<td>MIRC 204</td>
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<tr>
<td>SPCH 120</td>
<td>WRIT 121</td>
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</table>

LANSING COMMUNITY COLLEGE CATALOG 1997-98 • 157
SIGN LANGUAGE

SIGN LANGUAGE INTERPRETER
ASSOCIATE IN APPLIED ARTS

Curriculum Code: 10202 (Effective Fall 1997–Summer 2002)

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 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 students may find it necessary to complete specific coursework 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 175, telephone number (517) 485-1410.

REQUIREMENTS

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<td>Math for Liberal Arts I</td>
<td>3</td>
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<tr>
<td>PSYC 200</td>
<td>Introduction to Psychology</td>
<td>4</td>
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<tr>
<td>PSYC 205</td>
<td>Human Growth and Development</td>
<td>3</td>
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<tr>
<td>SIGN 160</td>
<td>Orientation to Deafness</td>
<td>2</td>
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<tr>
<td>SIGN 161</td>
<td>American Sign Language I</td>
<td>3</td>
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<tr>
<td>SIGN 162</td>
<td>American Sign Language II</td>
<td>3</td>
</tr>
<tr>
<td>SIGN 163</td>
<td>American Sign Language III (See Note 1)</td>
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<td>SIGN 164</td>
<td>American Sign Language IV</td>
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<tr>
<td>SIGN 166</td>
<td>Fingerspelling</td>
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<tr>
<td>SIGN 167</td>
<td>Receptive Manual Communication (See Note 1)</td>
<td>3</td>
</tr>
<tr>
<td>SIGN 250</td>
<td>Oral Culture and History</td>
<td>3</td>
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<td>SIGN 261</td>
<td>Principles of Interpreting I</td>
<td>3</td>
</tr>
<tr>
<td>SIGN 262</td>
<td>Principles of Interpreting II</td>
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<tr>
<td>SIGN 263</td>
<td>Sign to Voice Interpreting I</td>
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<td>SIGN 264</td>
<td>Sign to Voice Interpreting II</td>
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<tr>
<td>SIGN 267</td>
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<tr>
<td>SIGN 268</td>
<td>Pracicum II</td>
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<td>SIGN 269</td>
<td>Independent Study in Sign Language I</td>
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<td>SOCL 120</td>
<td>Introduction to Sociology</td>
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<td>SPCH 120</td>
<td>Dynamics of Communication</td>
<td>3</td>
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<td>WRIT 121</td>
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<td>WRIT 122</td>
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LIMITED CHOICE REQUIREMENTS

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<td>SIGN 260</td>
<td>Linguistic Principles of American Sign Language</td>
<td>3</td>
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<tr>
<td>SIGN 265</td>
<td>Advanced Interpreting and Transliterating Techniques</td>
<td>3</td>
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MINIMUM TOTAL: 72

NOTES
1. An Interpreter screening is required after the successful completion of SIGN 163 and SIGN 167.
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.

<table>
<thead>
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<td>ISCI 121</td>
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<td>SIGN 166</td>
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<td>SIGN 164</td>
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<td>PSYC 205</td>
<td>MATH 201</td>
<td>SIGN 261</td>
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V     VI

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<tr>
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SIGN LANGUAGE INTERPRETER
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 10187 (Effective Fall 1997-Summer 2002)

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 of Deafness for the State of Michigan.

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 Human, Health and Public Service Careers Department, Gannon Vocational-Technical Center, Room 175, telephone number (517) 485-1410.

REQUIREMENTS

<table>
<thead>
<tr>
<th>COURSE</th>
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<tr>
<td>SIGN 150</td>
<td>Orientation to Deafness</td>
<td>2</td>
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<tr>
<td>SIGN 151</td>
<td>American Sign Language I</td>
<td>3</td>
</tr>
<tr>
<td>SIGN 152</td>
<td>American Sign Language II</td>
<td>3</td>
</tr>
<tr>
<td>SIGN 163</td>
<td>American Sign Language III (See Note 1)</td>
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</tr>
<tr>
<td>SIGN 164</td>
<td>American Sign Language IV</td>
<td>3</td>
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<tr>
<td>SIGN 166</td>
<td>Fingerspelling</td>
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<td>SIGN 177</td>
<td>Receptive Manual Communication (See Note 1)</td>
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<tr>
<td>SIGN 251</td>
<td>Principles of Interpreting I</td>
<td>3</td>
</tr>
<tr>
<td>SIGN 252</td>
<td>Principles of Interpreting II</td>
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</tr>
<tr>
<td>SIGN 253</td>
<td>Sign to Voice Interpreting I</td>
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<tr>
<td>SIGN 258</td>
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TOTAL: 34 CREDITS

LIMITED CHOICE REQUIREMENTS

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<th>COURSE</th>
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<td>SIGN 168</td>
<td>Expressive Manual Communication</td>
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<td>SIGN 170</td>
<td>Creative Arts Signer</td>
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<td>SIGN 176</td>
<td>Advanced Fingerspelling</td>
<td>2</td>
</tr>
<tr>
<td>SIGN 260</td>
<td>Deaf Culture and History</td>
<td>3</td>
</tr>
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<td>SIGN 266</td>
<td>Linguistic Principles of American Sign Language</td>
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<td>SIGN 264</td>
<td>Sign to Voice Interpreting II</td>
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<td>SPCH 130</td>
<td>Fundamentals of Public Speaking</td>
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<tr>
<td>SPEL 110</td>
<td>Spelling Development II</td>
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</table>

MINIMUM TOTAL 37

NOTES
1. An interpreter screening is required after the successful completion of SIGN 163 and SIGN 167.

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.

<table>
<thead>
<tr>
<th>II</th>
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<tr>
<td>SIGN 160</td>
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<td>SIGN 166</td>
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</table>
GENERAL TECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 10213 (Effective Fall 1997–Summer 2002)

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 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 students may find it necessary to complete specific coursework 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 220, telephone number (517) 483-1336.

REQUIREMENTS

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<td>DTDS 110</td>
<td>Industrial Blueprint Reading</td>
<td>3</td>
</tr>
<tr>
<td>EMTA 100</td>
<td>Medical First Responder</td>
<td>3</td>
</tr>
<tr>
<td>MACH 100</td>
<td>Manufacturing Processes</td>
<td>4</td>
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<tr>
<td>MACH 135</td>
<td>Metallurgy and Heat Treat</td>
<td>4</td>
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<tr>
<td>QUAL 100</td>
<td>Introduction to Quality Assurance</td>
<td>3</td>
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<tr>
<td>WRIT 124</td>
<td>Technical Writing</td>
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LIMITED CHOICE REQUIREMENTS

<table>
<thead>
<tr>
<th>TOTAL: 40 CREDITS</th>
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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)  9
Speech Communication Core Area  3
Science/Technology Core Area  3
Global Perspectives and Diversity Core Area  3

CHOICE 2: Mathematics

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)  23 Credits

MINIMUM TOTAL  50

NOTES

1. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.
2. Contact an advisor in GVT 220 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.

<table>
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<td>WRIT 124</td>
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160 • LANSING COMMUNITY COLLEGE CATALOG 1997–98
### TOURISM: AIRLINE AND TRAVEL AGENCY OPERATIONS

**ASSOCIATE IN BUSINESS DEGREE**

**Curriculum Code:** 10220 (Effective Fall 1997–Summer 2002)

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 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 students may find it necessary to complete specific coursework 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) 482-1522.

### REQUIREMENTS

<table>
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<td>CABS 110</td>
<td>Microsoft Office</td>
<td>3</td>
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<tr>
<td>TRVL 100</td>
<td>Introduction to Travel Agency Operations</td>
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<tr>
<td>TRVL 110</td>
<td>Travel Agency Ticketing Domestic/International</td>
<td>3</td>
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<tr>
<td>TRVL 120</td>
<td>North American Travel I</td>
<td>3</td>
</tr>
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<td>TRVL 125</td>
<td>Foreign Country Travel II</td>
<td>3</td>
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<tr>
<td>TRVL 130</td>
<td>Foreign Country Travel III</td>
<td>3</td>
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<td>TRVL 131</td>
<td>Foreign Country Travel IV</td>
<td>3</td>
</tr>
<tr>
<td>TRVL 140</td>
<td>Computer Reservation Training</td>
<td>3</td>
</tr>
<tr>
<td>TRVL 150</td>
<td>Tourism/Travel Operations</td>
<td>3</td>
</tr>
<tr>
<td>TRVL 200</td>
<td>Profitable Travel Sales, Marketing, and Counseling</td>
<td>3</td>
</tr>
<tr>
<td>TRVL 210</td>
<td>Group Travel/ Escorting Operations</td>
<td>4</td>
</tr>
<tr>
<td>TRVL 230</td>
<td>Travel and Tourism Law and Current Events</td>
<td>3</td>
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<tr>
<td>TRVL 250</td>
<td>Advanced Computer Ticketing</td>
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</tr>
<tr>
<td>TRVL 255</td>
<td>Advanced Sabre Training</td>
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**TOTAL: 43 CREDITS**

### LIMITED CHOICE REQUIREMENTS

**TOTAL: 23–24 CREDITS**

Complete the indicated number of credits from each choice listed below.

#### CHOICE 1: General Education Core Areas

(See the GENERAL EDUCATION section above)

- Writing Core Area: 3 credits
- Speech Communication Core Area: 3 credits
- Science/Technology Core Area: 3 credits
- Global Perspectives and Diversity Core Area: 3 credits

#### CHOICE 2: Specific Travel Occupations

(Choose 1 Subchoice) **11–12 Credits**

##### Subchoice 2A: Tour Guide

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<td>Marketing and Managing Your Professional Image</td>
<td>3</td>
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<td>TRVL 145</td>
<td>Introduction to Cruise Sales and Ground Transportation</td>
<td>3</td>
</tr>
<tr>
<td>TRVL 150</td>
<td>Internship and Seminar</td>
<td>3</td>
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<tr>
<td>TRVL 220</td>
<td>International Relations</td>
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##### Subchoice 2B: Airline/Cruise Operations

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<tbody>
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<td>Airline/Airport Operations</td>
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<td>TRVL 145</td>
<td>Introduction to Cruise Sales and Ground Transportation</td>
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<tr>
<td>TRVL 146</td>
<td>Seminar at Sea</td>
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<tr>
<td>TRVL 180</td>
<td>Your Career/Flight Attendant</td>
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</tbody>
</table>

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**NOTES**

1. A minimum of 11 credits must be taken from Subchoices 2A, 2B, 2C, and/or departmentally approved electives. Students following Subchoice 2D must consult with a Tourism and Travel Agency 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.
TRUCK DRIVER TRAINING

Curriculum Code: 10325 (Effective Fall 1997–Summer 1998)

A truck driver operates a commercial vehicle which 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 vehicles in all traffic conditions. Truck drivers also need to maintain records which 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 Class 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 1997/98 academic year. For the most recent and complete information, interested students should contact Lansing Community College, Truck Driver Training Program, 2416 28th Street, Augusta, MI 48012, Program Director, John Theroux, telephone number (616) 731-4125.

REQUIREMENTS FOR ADMISSION TO THE TRUCK DRIVER TRAINING PROGRAM
Curriculum Code: 16718

In order to be considered as a candidate for this program, an applicant must meet the following admission requirements:

a. 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 10 days prior to the class starting date.)

b. 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.

c. 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 within 3 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, or 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.

d. 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 calculations.

e. Be able to pass the Department of Transportation (D.O.T.) physical examination. The physical form and card must be obtained from the LCC Truck Driver Training Program. PLEASE NOTE: THE T.D.T. 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 examination is the applicant's responsibility.

f. Be at least 18 years old. Those persons between the ages of 18 and 21 should realize job opportunities are limited for persons in this age bracket, and they will more likely encounter difficulty in obtaining employment. Graduates must be 21 years of age to drive outside the State of Michigan.

g. 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.

h. Students are subject to drug and alcohol testing as required by D.O.T. regulations.

i. 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: 10326

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<tr>
<th>REQUIREMENTS</th>
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<tbody>
<tr>
<td>TDP 110</td>
<td>Truck Train I</td>
</tr>
<tr>
<td>TDP 111</td>
<td>Truck Train II</td>
</tr>
<tr>
<td>TDP 112</td>
<td>Truck Train III</td>
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</tbody>
</table>

MINIMUM TOTAL: 9 CREDITS

NOTES
1. 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.

162 • LANSING COMMUNITY COLLEGE CATALOG 1997–98
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 and Advising Center, Room 103 of the Arts and Sciences Building.

In addition, students intending to transfer should follow the transfer curriculum guides 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.

Curriculum guides are available for many, but not all, possible transfer programs. If there is 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 Admissions Office
Room 232, Gannon Vocational-Technical Center
Telephone: (517) 483-1209
FAX: (517) 483-9668
E-MAIL: admissions@alpha.lansing.cc.mi.us

OR
LCC Counseling and Advising Center
Room 103, Arts and Sciences Building
Telephone: (517) 483-1191
FAX: (517) 483-9649
E-MAIL: jm1154@ois.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 as follows:

Accountancy
Accounting
Actuarial Science and Economics
Administrative Assistant
Advertising
Agriculture and Natural Resources
Communication
Agriscience
Animal Science
 Apparel Design
Applied Liberal Studies
Architecture
Art
Art History
Athletic Training
Atmospheric, Oceanic, and Space Sciences
Audiology and Speech Sciences
Automotive and Heavy Equipment Management
Aviation Flight Science
Aviation Maintenance Technology
Aviation Technology and Operations
Behavioral Science
Biochemistry
Biology
Botany
Broadcasting
Building Construction Management
Business
Accounting
Accounting Information Systems
Administration
Banking
Computer Management/Systems

Computer Information Science
Computer and Mathematical Sciences
Computer Information Management
Computer Information Systems
Computer Science
Conservation
Construction Management
Court and Conference Reporting
Criminal Justice
Criminology
Crop and Soil Science
Dental Hygiene
Dentistry, Pre-Professional
Dietetics
Earth Science
Economy
Economics
Education
Elementary
Physical
Secondary
Allied Health
Biology
Business
Chemistry
Home Economics
Industrial
Mathematics
Music
Physical
Technology
Vacation Technology
Special
Engineering
Administration
Arts
Aeronautical
Aerospace
Biosystems
Chemical
Civil
Computer
Construction and Management
Electrical
Environmental
Geological
Industrial
Material Science
Marine and Naval Arch
Mechanical
Metallurgical
Mining
Nuclear
Paper
Physics
Surveying

Engineering Technology
Automated Manufacturing
Automotive
Electrical/Electronics
Heating, Ventilation, Air Conditioning and Refrigeration
Manufacturing
Product Design
Welding

English
Environmental and Natural Resources Policy Studies
Environmental Chemistry
Environmental Geology
Environmental Health
Exercise and Sport Science
Facilities Management
Finance
Food Industry Management
Food Marketing
General Business Administration
Health Services Administration
Hospitality Services Administration
Human Resources Management
Industrial Management
Information Systems
Insurance Studies
Integrated Supply Management
Language and World Business
Logistics
Management
Marketing
Materials Management
Operations Management
Organizational Sciences
Public Administration
Purchasing Management
Quality Management Leadership
Small Business
Statistics
Chemistry
Child Development
Chiropractic, Pre-Professional
Clinical Laboratory Science
Communication
Interpersonal and Public
Scientific and Technical
Studies
Technical and Professional
Communication Arts
Computational Mathematics

Family and Consumer Resources
Family Community Services
Family Life Education
Family Studies
Fire Science Generalist Program
Fisheries and Wildlife
Foods
Science
Service Administration
System Economics and Management
Technology and Management
Forestry
Geography
Geological Sciences
Geology
Health Care Administration
Health Fitness in Prevent and Rehab Program
Health Information Management
History
Home Economics
Horticulture
Hospitality
Business
Human Resources Administration
Industrial
Environmental Health
Health and Safety Management
Technology
Information Systems
Insurance
Interdisciplinary Studies
Interior Architecture
Interior Design
International Studies
James Madison
Journalism
Land Use Planning and Management
Landscape Architecture
Law, Pre Professional
Management
Health and Fitness
Health Services
Organizational Development Marketing
Mathematics
Mechanics
Medical Laboratory Sciences
Medical, Pre Professional
Medical Technology
Merchandising Management
Mortuary Science, Pre-Professional
Music
Natural Resources
Nursing
Nutritional Sciences
Occupational Therapy
Optometry, Pre-Professional
Packaging
Park and Recreation Resources
Pharmacy, Pre-Professional
Philosophy
Photography
Physician Assistant
Physical Therapy, Assistant
Podiatry, Pre-Professional
Political Science
Polymers and Coatings Technology
Printing Management/Marketing
Production Technology

LANSING COMMUNITY COLLEGE CATALOG 1997-98 www.163
Psychology
Public Administration
Public Relations
Public Service Management
Quality Management
Radiation Therapy Technology
Recreation
Recreational Management
Retail Management
Social Work
Sociology
Speech Pathology and Audiology
Sports Medicine

Colleges/universities for which transfer curricular guides are available are as follows (not all majors listed above are available at all transfer institutions):

Adrian College
Alma College
Andrews University
Aquinas College
Baker College
Bay de Noc Community College
Brooks Institute
Calvin College
Clark Atlanta University
Center for Creative Studies
Central Michigan University
Clarey College
Concordia College
Conley Law School
Davenport College/Lansing
Eastern Michigan University
Ferris State University
GMI Engineering and Management Institute
Grand Valley State University
Johnson and Wales University
Kendall College of Art and Design
Lake Superior State University
Lawrence Technological University
Life Chiropractic 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 one institution to another. The agreement stipulates that 30 semester credit hours of 100-level and above, general education courses will be granted to students who meet the requirements for the MACRAO Transfer Agreement.

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: 6 semester hours minimum

The following establishes the approved list of LCC courses under the four major distribution requirements for the MACRAO Transfer Agreement. Courses listed may be moved to one institution if another is more appropriate.

1. English Composition (minimum of six (6) semester credit hours)
   Any one from each group:
   - WRIT 121 or WRIT 131
   - WRIT 122 or ENGL 122 or WRIT 132 or ENGL 132
   A student with a 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.

II. Science and Mathematics (minimum of eight (8) semester credit hours)
   - ISCI 121 and 122 or ISCI 131 and 132
   - Courses in at least two (2) subject areas, with a minimum of one laboratory science course. NOTE: Underlined courses indicate a laboratory course.
   - ANAT 151, 152, 251
   - BIOL 121, 123, 127, 210, 212, 260
   - CHEM 135, 151, and 153, 120, 125
   - GEOL 206, 221, 222, 230
   - ISCI 121, 122, 131, 132
   - MATH 121, 122, 126, 130, 141, 151, 152, 201, 202
   - METR 200, 204
   - MCR 203 and 204
   - PN 225
   - PFW1 123
   - PHSY 222
   - PHYS 201 and 202, 215 and 225
   - STAT 170, 175

III. Social Science (minimum of eight (8) semester credit hours)
   Courses must be taken in more than one subject area.
   - Economics: ECON 120, 140, 201, 202, 213
   - Geography: GEOG 120, 200, 202
   - Political Science: POLS 120, 121, 230, 260, 270, 290
   - Psychology: CHDV 101; CJS 255; PSYC 128, 200, 220, 235, 265, 266
   - Sociology-Anthropology: ANTH 270; CJS 161, 102, 106; GER 100, SOC 120, 254, 256, 260; SOWK 101

IV. Humanities (minimum of eight (8) semester credit hours)
   This requirement may be fulfilled by taking 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
   - Art History: HUMS 211, 212
   - Foreign Language: CHIN 121, 122; FREN 121, 122, 201, 202; GRMN 121, 122, 201, 202; JAPN 121, 122, 201, 202; SPAN 121, 123, 201, 202
   - History: ECON 213; HIST 150, 210, 211, 212, 214, 215, 230, 235
   - Literature: ENGL 201, 203, 211, 212, 220, 245, 249, 251
   - Philosophy: PHIL 151, 152, 153, 211, 212, 263
   - Religion: RELG 211, 212, 241, 242, 250

NOTE: Students are advised to also review specific transfer curricular guidelines. Some transfer institutions, for example, may require both a biological and physical science to satisfy the requirements for the degree.

For further information and advising, contact an LCC academic advisor or counselor located in Room 103 of the Arts and Sciences Building (517) 485-1004 or Room 208 of the Student Personnel Services Building (517) 483-1185.

The following four-year institutions are signatory to the MACRAO Transfer Agreement:

- Adrian College
- Albion College
- Aquinas College
- Baker College
- Calvin College
- Central Michigan University
- Cleary College
- Davenport College
- Detroit College of Business
- Eastern Michigan University
- Ferris State University
- GMI Engineering and Management Institute
- Grand Valley State University
- Hope College
- Kalamazoo College
- Lake Superior State University
- Lawrence Technological University
- Madonna University
- Michigan Christian College
- Michigan State University
- Michigan Technological University
- Northern Michigan University
- Northwood University
- Olivet College
- Saginaw Valley State University
- St. Mary's College
- Spring Arbor College
- Western Michigan University

*Some limitations may apply. Check with individual college/university.
Course Descriptions
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. Semester prerequisite
5. Basic skills prerequisite (not all courses have this category)
6. Course description
7. Semester planned

Basic skill levels required for enrollment. Involves student testing and/or advising before registration. Other prerequisites may be added. See Class 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 Class Schedule or department each semester for current information.

For example:

<table>
<thead>
<tr>
<th>COURSE CODE</th>
<th>COURSE TITLE</th>
<th>SEMESTER PREREQUISITE</th>
<th>BASIC SKILLS PREREQUISITE</th>
<th>SEMESTER CREDITS</th>
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<td>ASTR 201</td>
<td>Introductory Astronomy</td>
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<td></td>
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<td>Basic Skills Prerequisite: Reading Level 5; Writing Level 4; Math Level 4</td>
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</table>

*Slash (/) means "or"; comma (,) means "and."
**F = Fall; Sp = Spring; Su = Summer

COURSE CODES USED IN DESCRIPTIONS

Courses are listed in course code order. The sequence is as follows:

ACCG  Accounting
AERO  Aerospace Studies
AHCC  Allied Health Courses
AIIB  American Institute of Banking: Lansing Area
ANAT  Anatomy
ANTH  Anthropology
ARCH  Architecture
ARTS  Art
ARWS  Art Seminars and Workshops
ASTR  Astronomy
AUTO  Automotive
AVAF  Aviation Airframe Maintenance
AVCE  Aviation Continuing Education
AVEL  Aviation Electronics
AVFT  Aviation Flight Training
AVGM  Aviation General Maintenance
AVGS  Aviation Ground School
AVIR  Aviation Instrument Repair
AVPP  Aviation Powerplant Maintenance
AVST  Aviation Simulator Training
BDCS  Business Development Seminars
BIOL  Biology
BLDR  Building Related
BLDT  Building Trades
BUSN  Business
CABS  Computer Applications Using Business Software
CACR  Court and Conference Reporting
CHCE  Continuing Health Careers
CHDV  Child Development
CHEM  Chemistry
CHIN  Chinese
CHSE  Community Health Services
CISB  Computer Information Systems for Business
CIVL  Civil Technology
CJUS  Criminal Justice
CNCP  Computerized Numerical Control Program
COOP  Cooperative Education
CPOA  Computer Office Applications
CPSC  Computer Science
CUAI  Credit Union Accounting and Insurance
CUUM  Credit Union Management
DAAH  Dental Assistant/Dental Hygiene
DANG  Dance
DAST  Dental Assisting
DHYN  Dental Hygiene
DTDS  Drafting and Design
ECON  Economics
EDUC  Education
ELCT  Electronics Technology
ELTE  Electrical Technology
EMSA  Emergency Medical Services
EMSB  Emergency Medical Services Seminars
EMTA  Emergency Medical Technology
ENGL  English
ENRI  Enrichment
ENVR  Environmental Science
ESLA  English as a Second Language
ESLT  English as a Second Language: Technical
FIRE  Fire Science
FREN  French
GEOG  Geography
GEOI  Geology
GERO  Gerontology
GRET  Geographical Resource and Environmental Technology
GRMN  German
HIST  History
HMFS  Hotel/Motel and Food Service Operations
HONR  Honors
HORT  Horticulture
HUMS  Humanities
HUSE  Human Services
HVAC  Heating, Ventilating, and Air Conditioning
IDMS  Diagnostic Medical Sonography
IMAG  Photography Technology
INAU  Industrial Automation
INSU  Insurance
INTR  Interior Design
IPAD  Radiation Therapy Technology
IRXT  Radiologic Technology
ISCI  Integrated Science

166 □ LANSING COMMUNITY COLLEGE 1997–98
<table>
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<th>Code</th>
<th>Course Name</th>
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<td>Journalism</td>
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<td>LAER</td>
<td>Labor Relations</td>
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<td>LAND</td>
<td>Landscape</td>
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<td>LEGL</td>
<td>Legal Assistant/Law</td>
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<td>LING</td>
<td>Linguistics</td>
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<td>MACH</td>
<td>Machine Tool Technology</td>
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<td>MAOG</td>
<td>Massage Therapy</td>
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<td>MATH</td>
<td>Mathematics</td>
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<td>MDCS</td>
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<td>PFCW</td>
<td>Physical Fitness: Combative/Weight Training</td>
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<td>PFDA</td>
<td>Physical Fitness: Dance Courses</td>
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<tr>
<td>PFFT</td>
<td>Physical Fitness: Fitness Courses</td>
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<tr>
<td>PFHC</td>
<td>Physical Fitness: Health/Fitness Cardiac</td>
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<tr>
<td>PFHW</td>
<td>Physical Fitness: Health/Fitness Wellness</td>
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<tr>
<td>PFI5</td>
<td>Physical Fitness: Individual Sport/Interest</td>
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<tr>
<td>FFOA</td>
<td>Physical Fitness: Outdoor Activity</td>
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<td>PFFR</td>
<td>Physical Fitness: Professional Courses</td>
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<tr>
<td>PFTS</td>
<td>Physical Fitness: Team Sport</td>
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<td>QSEM</td>
<td>Quality Assurance Seminars</td>
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<td>RESP</td>
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<td>Sociology</td>
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<td>Social Work</td>
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<td>Speech Communication</td>
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<td>Statistics</td>
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<td>SURG</td>
<td>Surgical Technology</td>
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<tr>
<td>TDPF</td>
<td>Truck Driver Training Program</td>
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<td>TECH</td>
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<td>THEA</td>
<td>Theater</td>
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<tr>
<td>TRVL</td>
<td>Tourism: Airline and Travel Agency Operations</td>
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<tr>
<td>VCBL</td>
<td>Vocabulary Improvement</td>
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<td>Welding Technology</td>
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<td>Writing</td>
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<tr>
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<td>Writing: Restricted</td>
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</table>

LANSING COMMUNITY COLLEGE 1997-98
ACCG 100 - ACCOUNTING

ACCG 100  Practical Accounting for Non-Majors  3
Semester Prerequisite: None
The student will learn the bookkeeping procedures necessary for preparation of financial statements and payroll. Manual and computer systems will be covered. (F, Sp, Su)

ACCG 101  Accounting Information for Management  3
Semester Prerequisite: None
Students will learn to interpret financial statements and use this information for analysis, budgeting, and decision-making. (F, Sp)

ACCG 140  Individual Income Taxes  3
Semester Prerequisite: None
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, Sp)

ACCG 160  Payroll Systems and Business Taxes  2
Semester Prerequisite: ACCG 100/Equivalent
The course covers labor laws affecting payroll, calculation of payroll and payroll taxes using both manual and computer payroll systems, preparation of tax forms for payroll, taxes, and personal property taxes. (Su)

ACCG 210  Principles of Accounting I  4
Semester Prerequisite: MATH 107/MATH 100/Equivalent
Basic Skills Prerequisite: Reading Level 6; Writing Level 2; Math Level 5
Principles of Accounting I is the first 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)

ACCG 211  Principles of Accounting II  4
Semester Prerequisite: 2.0 Minimum in ACCG 210, MATH 112/Equivalent
Basic Skills Prerequisite: Math Level 8
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)

ACCG 220  Intermediate Accounting I  4
Semester Prerequisite: 2.5 Minimum in ACCG 211, Lotus Experience
The purpose of this course is to review and expand upon the concepts of financial accounting that were covered in the Principles courses, to master time value of money concepts, and to cover the more complex and theoretical aspects of accounting for revenue recognition, cash, receivables, and inventories. (F, Sp)

ACCG 221  Intermediate Accounting II  4
Semester Prerequisite: 2.0 Minimum in ACCG 220
This course provides an in-depth coverage of long-term assets and liabilities, financial instruments, leases, pensions, accounting for income taxes, stockholders' equity, earnings per share, and inflation accounting. (Sp)

ACCG 230  Cost Accounting  4
Semester Prerequisite: 2.0 Minimum in ACCG 211, ACCG 260
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 231  Managerial Accounting  4
Semester Prerequisite: 2.0 Minimum in ACCG 230
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 235  Budgeting  2
Semester Prerequisite: ACCG 211
This course covers the budget cycle of an organization, both public and private, from the managerial perspective. Topics covered include budgetary terms, concepts and general form, performance budgeting, program budgeting, zero base budgeting, budgeting approval process, budgetary control, and the auditing phase of a budget. (F)

ACCG 240  Federal Income Tax I  4
Semester Prerequisite: 3.0 Minimum in ACCG 211, Lotus Experience
This course teaches the first in a two-semester sequence in federal income tax. This course deals with the 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 241  Federal Income Tax II  4
Semester Prerequisite: ACCG 240
This course 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 exemption entities from a historical and theoretical perspective, as well as the preparation of tax returns under current tax law. (Sp)

ACCG 245  Accounting Internship  2
Semester Prerequisite: Departmental Approval
This internship provides the student with on-the-job experience in the accounting field. It requires 128 hours of work experience. (F, Sp, Su)

ACCG 250  Advanced Accounting  4
Semester Prerequisite: 2.0 Minimum in ACCG 221/Departmental Approval
This course covers business combinations, foreign currency accounting, and partnerships in depth. In addition, the course provides an overview of governmental and nonprofit accounting. (Su)

ACCG 260  Microcomputer Accounting Systems  4
Semester Prerequisite: 2.0 Minimum in ACCG 210
Microcomputer Accounting Systems prepares students to work with and design information systems and to use the scientific method in problem solving. Issues and problems related to microcomputers and other technology are emphasized. Students learn to work with systems flowcharts, manual and computerized accounting systems, database design, and problem solving with spreadsheets. (F, Sp, Su)

ACCG 265  Independent Study in Accounting  1
Semester Prerequisite: Departmental Approval
With this course, students will learn advanced accounting topics as a part of a class, an independent study, or as 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 271  Principles of Finance  3
Semester Prerequisite: ACCG 211
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. (F, Sp)

ACCG 280  Governmental Accounting  4
Semester Prerequisite: ACCG 211
Applications of fund accounting principles are applied to governmental (local and state) and not-for-profit entities. Students learn the 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. (F)

ACCG 290  Auditing  3
Semester Prerequisite: ACCG 221/Departmental Approval
In this course, the student will learn the theory and practice of auditing according to generally accepted auditing standards. (F)

ACCG 295  CPA Review–Tax, Managerial and Cost, Government, and Nonprofit  2
Semester Prerequisite: Must requirement for CPA Exam
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 295 CPA Review - Business Law
Semester Prerequisite: Meet Requirement for CPA Exam
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
Semester Prerequisite: Meet Requirement for CPA Exam
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 - Financial Accounting and Reporting
Semester Prerequisite: Meet Requirement for CPA Exam
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
Semester 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
Semester Prerequisite: None
This course provides an introduction to the U.S. Air Force today. Course topics include officerhood and professionalism, group leadership problems, and introduction to communication skills. Includes a leadership laboratory. (Sp)

AERO 211 Development of Air Power I
Semester Prerequisite: None
This course focuses on Air Force heritage. Course topics include evaluation of air power concepts and doctrines, 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
Semester Prerequisite: None
This course focuses on Air Force leaders. 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)

AHCC - ALLIED HEALTH COURSES

AHCC 104 Patient Care Principles
Semester Prerequisite: Admission to Program, ANAT 145 Recommended Principles of basic patient care are presented to assist the student in managing patients in the health care setting. Information and simulated practice will include surgical aseptic techniques, infection control procedures, taking vital signs, handling medical emergencies, and other practices emphasizing the physical and emotional aspects of basic patient care. (F, Sp)

AHCC 106 Introduction to Pathology
Semester Prerequisite: ANAT 145, Health Careers Applicant/Student
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
Semester Prerequisite: Health Careers Applicant/Student
This course is designed to familiarize the student with common medications encountered in the health care occupations. Emphasis is on drug categories and the responsibilities associated with medication administration. (F, Sp, Su)

AHCC 111 Applied Electrocardiography
Semester Prerequisite: None
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 EKG's, cardiac pathology, and basic cardiac rhythm recognition will be presented. (F, Sp)

AHCC 112 Health Law and Ethics
Semester Prerequisite: Allied Health Applicant/Professional
This course is a presentation and discussion of legal ethical issues arising from the organization and delivery of health care services. Topics will include contract, tort, and business law; medical record-keeping and retention; agency; physicians' public duties; licensure, certification, and regulation of health professionals; consent, and exploration of issues arising from various ethical topics. (F)

AIBL - AMERICAN INSTITUTE OF BANKING - LANSING AREA

AIBL 101 Principles of Banking
Semester Prerequisite: None
This course is an introduction to the field of commercial banking, designed not only for newcomers to the field, but for students presently employed in banking who desire to broaden their knowledge and/or increase their opportunities for advancement. (F, Sp)

AIBL 120 Economics for Bankers
Semester Prerequisite: None
This course provides bankers with an introduction to the fundamental principles of economics. Special emphasis is placed on topics of importance to bankers. The text covers the basics of economic theory and examples of the application of economics to banking. (Sp)

AIBL 130 Financial Planning for Bankers
Semester Prerequisite: None
This course addresses the perspectives, principles, and practices of financial planning in an understandable, step-by-step format. Students will develop an understanding of the comprehensive process that looks at a customer's total financial picture and recommends strategies to achieve the customer's objectives. (F)

AIBL 160 Understanding and Selling Bank Products
Semester Prerequisite: None
Working from the customer's perspective, this course shows a student how to identify and practice six human relations skills that encourage smooth, clear, and personal communication. Includes the basic steps in selling, information about bank products and product benefits (rather than features) that appeal to a customer, and how to identify customer needs. (Sp)

AIBL 170 Preparing for Supervision
Semester Prerequisite: None
This course is designed to help the employee (student) prepare for the transition to supervision, and to help those who wish to evaluate their own capabilities and desires to move toward a supervisory role. (F)

AIBL 171 Customer Service for Bank Personnel
Semester Prerequisite: None
This course emphasizes the development of better communication skills to benefit employees, customers, and the bank. Students will learn effective ways of establishing contact, exploring customer needs, defining and resolving problems, and closing the encounter. (F)

AIBL 174 Personnel and the Law
Semester Prerequisite: None
This seminar is designed to provide an introduction and overview to the principles and application of laws affecting banking personnel policies and procedures. The seminar will be most applicable to bank personnel officers, managers, branch managers, and supervisors. (F)

AIBL 175 Bank Security for Customer Contact Personnel
Semester Prerequisite: None
This course is designed to teach students how to prevent security problems from arising by developing good security habits. It develops students' ability to detect security threats and to handle these threats in a way that ensures personal safety and minimizes the loss of depositors' funds. (F)
AIBL 176 Compliance Management 1
Semester Prerequisite: None
This course takes students through the steps leading to an effective compliance program. The course provides guidelines for determining how the compliance function fits with the overall bank structure, and it also explores how to implement a valid program and discusses ways to monitor and audit the program. (F)

AIBL 178 Problem Loans 1
Semester Prerequisite: None
This course outlines an effective program of loan analysis, points out the early warning signals of problem loans, and shows students how to minimize losses that a problem loan might cause. (F)

AIBL 179 Consumer Bankruptcy 5
Semester Prerequisite: None
This course presents, in non-technical terms, the history and development of the bankruptcy code, the specific provisions of the 1978 bankruptcy amendments, and the Bankruptcy Act. The course covers Chapters 7 and 11 filings, and the ways in which banks can minimize losses from customer bankruptcies. (Sp)

AIBL 190 Mortgage/Loan Documentation 2
Semester Prerequisite: None
This course emphasizes the basics of loan processing and underwriting. Students will develop skills necessary to conduct loan interviews, process loan applications, and make loan decisions, and will learn the real estate loan laws. (Sp)

AIBL 205 Money and Banking 3
Semester Prerequisite: ECON 140/142 or ECON 201/202, Departmental Approval
This course presents a fundamental treatment of how money functions in the U.S. and world economies. Topics include the concept of money supply, the role of banks as money creators, and the nation's payment mechanism, monetary and fiscal policies, and the federal reserve. (F)

AIBL 207 Consumer Lending and Loan Training 3
Semester Prerequisite: None
This course offers essential information about the maze of regulations that govern credit practices and reviews loan processing, cross-selling, and collections. Case studies and real loan plays are offered to acquaint students with effective loan interviewing skills. The course also provides hands-on training to improve the quality of the credit decision. (F)

AIBL 208 Commercial Lending and Loan Documentation 3
Semester Prerequisite: AIBL 101
This course focuses on how the commercial lending business is organized, how it contributes to bank profitability, and the total commercial lending process. Students will learn the credit-granting process which will help ensure asset quality, avoid pitfalls, and protect the bank's integrity. (Sp)

AIBL 212 Analysis of Financial Statements 3
Semester Prerequisite: AIBL 101
This course provides an opportunity to further develop the skills necessary to conduct a comprehensive and effective financial analysis of a business borrower in order to assess repayment capability. (Sp)

AIBL 214 Law and Banking: Principles 3
Semester Prerequisite: None
This course covers legal principles and a general review of legal problems pertaining to business and banking. Includes contracts, consideration, statutes of frauds, commercial paper, bank deposits, bank collections, titles, agencies, and extensions from the uniform commercial code. (F)

AIBL 215 Law and Banking: Applications 2
Semester Prerequisite: AIBL 214 Recommended
This course is an introduction to laws pertaining to secured transactions, letters of credit, and the bank collection process. Students will review the legal implications of normal activities and transactions in banking operations, the impact of the law, and applicable bank regulations. (Sp)

AIBL 221 Branch Banking Series 3
Semester Prerequisite: None
A variety of topics are presented in this course to help new and prospective branch managers develop the skills and prepare for their new responsibilities. Credit, human resource management, managing sales in the branch, and marketing are presented to help students sharpen their skills and perform their job more effectively. (Sp)

ANAT 145 Introductory Anatomy and Physiology 4
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 5
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 occupational programs, including dental assistant and medical transcriptional, as well as non-science majors. (F, Sp, Su)

ANAT 151 Anatomy and Physiology I 3
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 5
First course of a two-semester sequence in human anatomy and physiology emphasizing the structure and function of cells and tissues; the skeletal, muscular, nervous systems; and special sense organs. (F, Sp, Su)

ANAT 152 Anatomy and Physiology II 3
Semester Prerequisite: 0.0 Minimum in ANAT 151
This course is the second of a two-semester sequence emphasizing structure and function of endocrine, excretory, digestive, respiratory, circulatory, urinary, and reproductive systems. Includes fetal development and genetics. (F, Sp, Su)

ANTH 201 Human Anatomy 4
Semester Prerequisite: BIOL, CHEM, and/or Pre-req Recommended
Basic Skills Prerequisite: Reading Level 5
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)

ANTH 270 Cultural Anthropology 3
Semester Prerequisite: SOCL 120
This course compares ways of life for societies worldwide using anthropological theory and method. Basic institutions of human society, such as kinship, religion, politics, and economics are examined to provide a better understanding of the diversity of contemporary societies. (F)

ANTH 275 Physical Anthropology and Archeology 3
Semester Prerequisite: SOCL 120
Introduces human biological and cultural evolution, mechanisms of evolution, biological and cultural evidence from the fossil record, culture as an adaptive mechanism, and modern human variation. (Sp)

ANTH 276 Prehistoric Archeology 3
Semester Prerequisite: SOCL 120
This course is a general survey of archeology. Includes an overview of the history of the field and the basic theories and methods employed in the study of archæological cultures. Archeological sites and cultures are used as examples. (F)

ARCH 100 Introduction to Architecture 3
Semester Prerequisite: None
Basic Skills Prerequisite: Math Level 4
This course is for students with no previous experience in basic architectural drafting. 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 will be accomplished. (F, Sp, Su)

ARCH 101 Architectural Drafting I 4
Semester Prerequisite: ARCH 100/Equivalent
Basic Skills Prerequisite: Math Level 4
This course is the first of a four-part series of residential and light commercial architectural drafting courses. Students will use previously obtained 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
Semester Prerequisite: ARCH 101, ARCH 121/Concurrently
Basic Skills Prerequisite: Math Level 4
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
Semester Prerequisite: ARCH 100/Equivalent
Basic Skills Prerequisite: Math Level 4
Students with very little or no previous experience in the production of architectural graphics will be introduced to the basic techniques of sketching, axonometric, and perspective drawings. The theory and production of the most commonly used professional techniques of black and white architectural rendering and basic modeling will be studied. (F, Sp, Su)

ARCH 122 Visual Communication II 3
Semester Prerequisite: ARCH 121/Equivalent
Basic Skills Prerequisite: Math Level 4
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 123 Visual Communication III 3
Semester Prerequisite: ARCH 122
Basic Skills Prerequisite: Math Level 4
The goal of this course is to use the student's previously obtained graphic production knowledge to realistically depict three-dimensional architectural spaces and related environments. An emphasis on developing the use of light and shadow and the true depiction of textures and materials will be taught. (F)

ARCH 126 Model Building 2
Semester Prerequisite: None
Basic Skills Prerequisite: Math Level 4
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
Semester Prerequisite: None
Basic Skills Prerequisite: Math Level 4
This course is designed for beginning through advanced students of architecture who want to study the theories behind the design of the American single-family residence. Architectural styles, planning concepts, the writing of design criteria programs, and the production of basic diagrams through finished concept drawings will be accomplished. (F, Sp)

ARCH 131 City Planning 3
Semester Prerequisite: None
Basic Skills Prerequisite: Math Level 4
This is an introduction to the field of urban and regional planning. The development of planning theory, process, and practices, such as urban design, environmental, and land-use planning; transportation, economic development, housing; and community facilities, will be studied. The history of various cities and their development will also be studied. (F, Sp)

ARCH 138 Architecture Portfolio 4
Semester Prerequisite: CNOP 101/TECH 130, Second Year Student
This course will allow students to prepare a portfolio of previous classroom and professional work to be used for employment interviews and/or transfer to four-year institutions. Portfolios will be prepared using a variety of graphic techniques and will introduce the students to computer-generated portfolio presentations. (Sp)

ARCH 141 Architectural History I 3
Semester Prerequisite: None
Beginning with ancient times, this course studies the major civilizations which have contributed to the development of the architecture of world civilizations. A wide variety of visual media will be used to present the major theories, works, personalities in architecture, and the decorative arts through the Renaissance. (F, Sp)

ARCH 142 Architectural History II 3
Semester Prerequisite: ARCH 141 Recommended
This course, the second in a series, examines the greatest works and principal figures in world architectural history from the 1600s forward. Using a variety of visual media, this course will look at the principal works, theories, and individuals who have had the greatest impact on architecture and decorative arts to the present day. (F, Sp)

ARCH 146 Preservation and Adaptive Reuse Architecture 3
Semester Prerequisite: None
Basic Skills Prerequisite: Math Level 4
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 new uses for existing structures. (F, Sp)

ARCH 181 Barrier-Free Design 3
Semester Prerequisite: None
Basic Skills Prerequisite: Math Level 4
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 2
Semester Prerequisite: ARCH 100, ARCH 181
This course is designed for students with some architectural drafting experience. Students will apply AIA 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
Semester Prerequisite: ARCH 102, ARCH 141
Basic Skills Prerequisite: Math Level 6
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
Semester Prerequisite: ARCH 201, ARCH 271/Concurrently
Basic Skills Prerequisite: Math Level 6
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
Semester Prerequisite: ARCH 101/Concurrently
Basic Skills Prerequisite: Math Level 4
This course is an introduction to the basic theories and methods of architectural design, problem-solving techniques, and design methodologies using contemporary architectural 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
Semester Prerequisite: ARCH 211
Basic Skills Prerequisite: Math Level 4
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. (Sp)

ARCH 213 Facilities Design 3
Semester Prerequisite: ARCH 101/Equivalent
Basic Skills Prerequisite: Math Level 4
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
Semester Prerequisite: ARCH 100 Equivalent
Basic Skills Prerequisite: Math Level 4
An introductory course to architectural computer-aided drafting, using DataCAD on a PC computer system. Students will 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 presentation drawings and perspectives. (F, Sp, Su)

ARCH 222 Architectural DataCAD II
Semester Prerequisite: ARCH 221
Basic Skills Prerequisite: Math Level 4
This course is a continuation of ARCH 221 and will develop the student’s skills by introducing advanced two-dimensional operations, the creation and use of templates, 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 Architectural DataCAD Independent Study
Semester Prerequisite: ARCH 222, Approval Required
Basic Skills Prerequisite: Math Level 4
This is an advanced level, computer-aided drafting and design, independent study course, using DataCAD software. After completing all available structured DataCAD courses, the student will outline, research, design, and construct a project of their own selection with the approval and guidance of the instructor. (F, Sp, Su)

ARCH 231 Architectural AutoCAD I
Semester Prerequisite: ARCH 100 Equivalent, Windows Experience
Basic Skills Prerequisite: Math Level 4
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
Semester Prerequisite: ARCH 231
Basic Skills Prerequisite: Math Level 4
This course is a continuation of ARCH 231, utilizing advanced two-dimensional techniques and a strong emphasis in the three-dimensional environment. Additional topics include digitizing drawings, paper space, object snaps and rendering, basic 3-D solids, program customization, and an introduction to AutoLISP. (F, Sp)

ARCH 235 Architectural AutoCAD Independent Study
Semester Prerequisite: ARCH 232, Approval Required
Basic Skills Prerequisite: Math Level 4
This is an advanced level, computer-aided drafting and design, independent study course, using AutoCAD software. After completing all available structured AutoCAD courses, the student will outline, research, design, and construct a project of his or her own selection, with the approval and guidance of the instructor. (F, Sp, Su)

ARCH 237 Architectural Computer Rendering
Semester Prerequisite: ARCH 222/ARCH 232, Windows Experience
Basic Skills Prerequisite: Math Level 4
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 241 Architectural AES Computer Graphics I
Semester Prerequisite: ARCH 100 Equivalent
Basic Skills Prerequisite: Math Level 4
This course is designed as an entry-level, computer-aided drafting and design course using the AES software. Students will learn to build command strings in the modeling program to construct 3-D geometry, edit, create layers, plot, apply text and dimensions, and to open and close graphic windows. (F, Sp)

ARCH 245 Architectural AES Computer Graphics II
Semester Prerequisite: ARCH 241
Basic Skills Prerequisite: Math Level 4
This course will build on the knowledge gained in ARCH 241 and will add additional applications in modeling, file management, plotting, and rendering. (Sp)

ARCH 246 Architectural AES Independent Study
Semester Prerequisite: ARCH 242, Approval Required
Basic Skills Prerequisite: Math Level 4
This is an advanced level, computer-aided drafting and design independent study course using AES software. After completing all available structured AES courses, the student will outline, research, design, and construct a project of their own selection with the approval and guidance of the instructor. (F, Sp, Su)

ARCH 251 Architectural MicroStation I
Semester Prerequisite: ARCH 100 Equivalent, Windows Experience
Basic Skills Prerequisite: Math Level 4
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
Semester Prerequisite: ARCH 251 Equivalent
Basic Skills Prerequisite: Math Level 4
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. (Sp)

ARCH 255 MicroStation Independent Study
Semester Prerequisite: ARCH 252, Approval Required
Basic Skills Prerequisite: Math Level 4
This is an advanced level, computer-aided drafting and design independent study course using MicroStation software. After completing all available structured MicroStation courses, the student will outline, research, design, and construct a project of their own selection with the approval and guidance of the instructor. (F, Sp, Su)

ARCH 271 Structural Theory
Semester Prerequisite: ARCH 101/Concurrently
Basic Skills Prerequisite: Math Level 4
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
Semester Prerequisite: ARCH 101/Concurrently
Basic Skills Prerequisite: Math Level 4
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 274 Architectural Professional Practice
Semester Prerequisite: ARCH 101
Basic Skills Prerequisite: Math Level 4
Students will have the opportunity to study the configuration, responsibilities, and ethics of professional architectural offices. This course will examine and visit various offices of the architectural, engineering, and construction industry and explore job responsibilities, personnel, and the procedures used in the production of construction documents. (F, Sp)

ARCH 275 Alternative Structures
Semester Prerequisite: None
Basic Skills Prerequisite: Math Level 4
The study of post and beam, underground, stress skin, and other alternative methods of construction will be studied in this course. (F, Sp)

ARCH 278 Energy Efficient Design
Semester Prerequisite: None
Basic Skills Prerequisite: Math Level 4
An examination of all commonly used passive and active energy systems, energy efficient design, and the materials relating to insulation of residential and commercial construction will be reviewed in this course. (F, Sp)

ARCH 283 Materials of Construction
Semester Prerequisite: ARCH 101 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)
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Semester Prerequisite(s)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARTS 005</td>
<td>Computer Graphics Lab</td>
<td>Currently Enrolled Art Student, Departmental Approval</td>
<td>This course teaches the use of the Computer Graphics Laboratory. It is not a course. ARTS 005 enables the student to utilize the laboratory equipment and software to create individualized art graphics for art courses conducted in a traditional classroom environment. (F, Sp, Su)</td>
</tr>
<tr>
<td>ARTS 102</td>
<td>2-Dimensional Design</td>
<td>None</td>
<td>Basic Skills Prerequisite: Reading Level 3, Writing Level 3. Universal elements and principles of two-dimensional design, design theory, and process. (F, Sp, Su)</td>
</tr>
<tr>
<td>ARTS 103</td>
<td>3-Dimensional Design</td>
<td>ARTS 102</td>
<td>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, Su)</td>
</tr>
<tr>
<td>ARTS 131</td>
<td>Drawing I</td>
<td>ARTS 102/IMAG 113/Concurrently</td>
<td>An introductory studio course using a variety of 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)</td>
</tr>
<tr>
<td>ARTS 132</td>
<td>Life Drawing</td>
<td>ARTS 131</td>
<td>Basic concepts, approach, and techniques involving drawing the human figure, using materials such as pencil, ink, charcoal, and conte crayon. (F, Sp, Su)</td>
</tr>
<tr>
<td>ARTS 137</td>
<td>Drawing II</td>
<td>ARTS 131</td>
<td>Further development of the drawing process with emphasis on commercial design logic. This includes various theories, media, and techniques such as perspective drawing, color rendering, and marker techniques. (F, Sp, Su)</td>
</tr>
<tr>
<td>ARTS 140</td>
<td>Printmaking I</td>
<td>ARTS 102/Concurrently</td>
<td>An introduction to the various printmaking techniques, tools, and vocabulary of the printmaker. Includes etching, collagraph, embossing, monoprinting, and intaglio cut. (F, Sp)</td>
</tr>
<tr>
<td>ARTS 141</td>
<td>Printmaking II</td>
<td>ARTS 140</td>
<td>Students expand on processes and concepts introduced in Printmaking I (ARTS 140). Emphasizes refining technical skills and conceptual development. (F, Sp)</td>
</tr>
<tr>
<td>ARTS 145</td>
<td>Screen Printing I</td>
<td>ARTS 102/Concurrently</td>
<td>An introduction to basic silkscreen stencil processes with an emphasis on registration techniques. Includes constructing a frame and making a photocopy transparency. (F, Sp)</td>
</tr>
<tr>
<td>ARTS 146</td>
<td>Screen Printing II</td>
<td>ARTS 145</td>
<td>Students expand on processes and concepts introduced in Screen Printing I (ARTS 145). Exploration and experimentation with more complex techniques and problems. Includes an in-depth study of photographic processes in combination with paper, cut film, and block-out stencils. (F, Sp)</td>
</tr>
<tr>
<td>ARTS 151</td>
<td>Computer Graphic Art</td>
<td>ARTS 102/IMAG 114, ARTS 131</td>
<td>A beginning course for students interested in creating artistic images using the computer as a tool. Students must show evidence of design and drawing skills to enroll. (F, Sp, Su)</td>
</tr>
<tr>
<td>ARTS 162</td>
<td>Typography and Layout Indication</td>
<td>ARTS 102/Concurrently</td>
<td>Use of type in communication design with an emphasis on creativity. Includes the history of typography, type style identification, classification, and selection. Students will be introduced to the tools, materials, and techniques necessary to professionally render comprehensive layouts. (F, Sp, Su)</td>
</tr>
<tr>
<td>ARTS 171</td>
<td>Computer Graphics for Photography</td>
<td>ARTS 102/IMAG 114</td>
<td>An introduction to computer manipulation of photographic images. Design and color skills are required for enrollment. (F, Sp, Su)</td>
</tr>
<tr>
<td>ARTS 175</td>
<td>Electronic Design I</td>
<td>ARTS 102/Concurrently</td>
<td>An introductory hands-on course designed to provide the student with a working knowledge of page layout and object-oriented illustration software programs utilizing a Macintosh computer. Emphasis is on design using electronic publishing applications. (F, Sp, Su)</td>
</tr>
<tr>
<td>ARTS 176</td>
<td>Electronic Design II</td>
<td>Departmental Approval</td>
<td>An advanced hands-on course in electronic publishing techniques with an emphasis on graphic design and layout. Expands on concepts introduced in Electronic Design I (ARTS 175). Includes type-intensive document layout, scanning, and a variety of graphic file formats. (F, Sp)</td>
</tr>
<tr>
<td>ARTS 177</td>
<td>Computer Prepress Production Techniques</td>
<td>ARTS 171, ARTS 175</td>
<td>Digital prepress production techniques for computer-generated media, including color separation, color trapping, resolution, paper and film output, and digital file preparation. Instruction includes an overview of computer system components and peripheral devices. Prepress terminology and processes covered. The course emphasis is on professional knowledge and accuracy. (F, Sp)</td>
</tr>
<tr>
<td>ARTS 180</td>
<td>Graphic Design I</td>
<td>ARTS 102, ARTS 182</td>
<td>An overview of the designer's role in developing design products for print, including the logotype and its varied applications. Color, paper, and type selection for the individual client will be emphasized. (F, Sp, Su)</td>
</tr>
<tr>
<td>ARTS 181</td>
<td>Graphic Design II</td>
<td>ARTS 137, ARTS 175, ARTS 190</td>
<td>An overview of publication and advertising design and the designer's role in the creative organization of typography, photography, and illustration. Emphasis on editorial concept, formal, and design considerations. (F, Sp)</td>
</tr>
<tr>
<td>ARTS 182</td>
<td>Graphic Design III</td>
<td>ARTS 181, MKTG 140</td>
<td>An advanced course involving corporate image and the design of promotional graphics, both two- and three-dimensional. Utilizes innovative design and media considerations. Students will work through the design process from initial concept to final presentation. (Sp)</td>
</tr>
<tr>
<td>ARTS 190</td>
<td>Matting and Framing Techniques</td>
<td>None</td>
<td>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)</td>
</tr>
<tr>
<td>ARTS 195</td>
<td>Employment and Business Issues for Artists</td>
<td>None</td>
<td>An introduction to business, legal, and marketing issues relevant to visual artists. Students will be introduced to copyright, contract and negotiation concerns, and basic record keeping. Job search/marketing skills content, including creative resumes, letter writing, and self promotion will focus on matching individual presentations to specific employment or freelance goals. (F, Sp)</td>
</tr>
</tbody>
</table>
ARTS 200 Painting I
Semester Prerequisite: ARTS 132, ARTS 131
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
Semester Prerequisite: ARTS 200
A continuation of Painting I (ARTS 200) emphasizing more advanced techniques and increasingly complex problems in painting. A variety of media, techniques, and approaches are encouraged. (F, Sp, Su)

ARTS 203 Figure Painting
Semester Prerequisite: ARTS 102, ARTS 132
A studio course in the human figure using various media such as oil paint, watercolor, acrylic paint, and pastel. (F, Sp)

ARTS 204 Watercolor I
Semester Prerequisite: ARTS 102, ARTS 131
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
Semester Prerequisite: ARTS 204
A continuation of Watercolor I (ARTS 204) emphasizing more advanced techniques and increasingly complex problems using watercolor. (F, Sp)

ARTS 206 Advanced Watercolor
Semester Prerequisite: ARTS 205
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/Black and White
Semester Prerequisite: ARTS 132, ARTS 137
Illustrative techniques utilizing both preliminary pencil drawings and finished ink drawings. Includes a variety of contemporary, realistic, and black-and-white techniques in both solid line and wash. Emphasizes on sound craftsmanship and solving simple problems through illustration. (F, Sp)

ARTS 214 Illustration/Color
Semester Prerequisite: ARTS 200, ARTS 203, ARTS 204, ARTS 213
Full-color illustration techniques using transparent, opaque watercolor, colored pencil, and mixed media. Stylized drawing techniques and design-oriented composition assignments, with emphasis on problem solving for specific outlets such as editorial and collateral materials. (F, Sp)

ARTS 216 Humorous Illustration I
Semester Prerequisite: ARTS 132
Cartoon illustrations from spot illustrations to complex compositions. Emphasis on strong stylized drawing, dramatic exaggerated action, simple but imaginative characterization, and uncluttered ink rendering techniques. Exercises in pencil, fiber-tipped pen, and brush and ink. (F, Sp, Su)

ARTS 217 Humorous Illustration II
Semester Prerequisite: ARTS 216
This course is designed to expand the student's cartooning and illustration skills through a variety of projects. Those projects will reflect some of the many uses of humorous illustration. (Sp)

ARTS 221 Airbrush Techniques I
Semester 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 freethand techniques. (F, Sp, Su)

ARTS 222 Airbrush Techniques II
Semester Prerequisite: ARTS 162, ARTS 131, ARTS 221
A continuation of Airbrush Techniques I (ARTS 221) with an emphasis on more complex airbrushing problems including product rendering and textile applications with a variety of specializations. (F, Sp, Su)

ARTS 232 Computer Graphics/2-D Animation
Semester Prerequisite: ARTS 216/IAMG 101/IAMG 111, ARTS 151, Departmental Approval
This course explains 2-D animation using the computer as a tool. Emphasis is on the history, theory, and principles of animation. (F, Sp)

ARTS 233 Computer Graphics/2-D Interactive
Semester Prerequisite: ARTS 232, Departmental Approval
A course which uses 2-D animation skills to create interactive presentations. Emphasis is on basic programming concepts. (F, Sp)

ARTS 234 Computer Graphics/3-D Animation I
Semester Prerequisite: ARTS 151, ARTS 171, Departmental Approval
An introduction to 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 Computer Graphics/3-D Animation II
Semester Prerequisite: ARTS 234, Departmental Approval
A continuation of 3-D Animation I (ARTS 234). Emphasis on creation of more complex models and animations. Introduction of sound and editing. (F, Sp)

ARTS 240 Basic Art for Elementary Teachers
Semester 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 262 Advanced Illustration
Semester Prerequisite: ARTS 214
An opportunity for the advanced student to continue with his or her personal exploration and development of illustration skills under the guidance of an instructor. The student must submit a written application and portfolio to receive departmental approval. (F, Sp)

ARTS 269 The Portfolio
Semester Prerequisite: Departmental Approval
The student will assemble a portfolio of work under instructor supervision in a cohesive, relevant presentation. The purpose of the portfolio is to secure employment in a chosen career area. This course is intended to be a final course in the Illustration Program. (F, Sp)

ARTS 270 Computer Graphics Independent Study
Semester Prerequisite: Departmental 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 departmental approval. Cannot be used as a major. (F, Sp, Su)

ARTS 272 Printmaking Independent Study
Semester Prerequisite: Departmental 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 departmental approval. Cannot be used as a major. (F, Sp, Su)

ARTS 276 Art Independent Study
Semester Prerequisite: Departmental 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 departmental approval. Cannot be used as a major. (F, Sp, Su)

ARTS 281 Art Internship
Semester Prerequisite: Departmental 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)

ARTS 282 Art Seminar and Workshops

ARTS 120 Basic Drawing
Semester Prerequisite: None
An introductory course using a variety of materials including pencil, charcoal, and ink. For non-majors. (F, Sp, Su)
ARWS 131 Introduction to Computer Illustration Workshop
Semester Prerequisite: Computer Familiarity
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 Quark Express
Semester Prerequisite: None
A condensed hands-on workshop designed to provide the student with a working knowledge of Quark Express software utilizing a Macintosh computer. Emphasis is on desktop publishing applications. (F, Sp)

ARWS 133 Introduction to Pagemaker
Semester Prerequisite: None
A condensed, hands-on workshop designed to provide the student with a working knowledge of Adobe PageMaker software utilizing a Macintosh computer. Emphasis is on desktop publishing applications. (F, Sp)

ARWS 134 Introduction to FreeHand
Semester Prerequisite: None
A condensed hands-on workshop designed to provide the student with a working knowledge of Macromedia FreeHand software utilizing a Macintosh computer. Emphasis is on desktop publishing applications. (F, Sp)

ARWS 135 Desktop Design Fundamentals
Semester Prerequisite: None
A seminar focusing on basic graphic design concepts to help the student improve the appearance and effectiveness of desktop publishing projects. This is not a hands-on computer course. (F, Sp)

ARWS 136 Introduction to Adobe Illustrator
Semester 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)

ARWS 137 Introduction to Adobe Photoshop
Semester Prerequisite: None
A condensed, hands-on workshop designed to provide the student with a working knowledge of Adobe Photoshop software utilizing a Macintosh computer. Emphasis is on desktop publishing applications. (Su)

ARWS 138 Introduction to MacroMind Director
Semester Prerequisite: None
A condensed, hands-on workshop designed to provide the student with a working knowledge of MacroMind Director software utilizing a Macintosh computer. Emphasis is on desktop publishing applications. (F)

ARWS 141 Watercolor Workshop
Semester 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 and Drawing
Semester 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 200 Handmade Paper
Semester Prerequisite: None
A condensed learning experience introducing the student to the art of handmade paper. Emphasis on pulp-making and casting techniques. Students will progress to more complex problems as ability develops. (F, Sp, Su)

ARWS 221 Calligraphy I
Semester 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 222 Calligraphy II
Semester Prerequisite: ARWS 221
A continuation of Calligraphy I (ARWS 221) emphasizing a variety of tools, materials, and techniques. Students will progress to more complex problems and experiment with aesthetic expression as skills progress. (Sp)

ARWS 224 Cartooning Workshop
Semester Prerequisite: None
Emphasizes simple but imaginative characterization and dramatic exaggerated action in a variety of media including pencil, fibertipped pen, and brush and ink. Previous drawing experience helpful. (F, Sp)

ASTR 211 Introductory Astronomy
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 5; Writing Level 5; Math Level 4
A non-mathematical survey of astronomy. Topics include ancient astronomy, the night sky, telescopes, space exploration, the solar system, stellar evolution, neutron stars and black holes, galaxies and quasars, cosmology, and the expanding universe. The LCC planetarium and observatory augment laboratory activities which illustrate important concepts in astronomy. (F, Sp, Su)

AUTO – AUTOMOTIVE

AUTO 100 Auto Service I
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 5; Writing Level 5; 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 101 Basic Automotive Seminar
Semester Prerequisite: None
This seminar is designed to introduce the student to the techniques and requirements of basic automotive maintenance. (F, Sp, Su)

AUTO 110 Auto Electrical Theory
Semester Prerequisite: AUTO 100/Concurrently/Approval
This course in basic electricity covers the fundamentals of automobile electricity. Materials covered will include electron theory, circuits, and wiring diagrams. The students will learn how circuits work and how to diagnose malfunctioning circuits. Maximum emphasis will be directed to vehicle diagnosis. (F, Sp)

AUTO 120 Auto Drive Train
Semester Prerequisite: AUTO 100/Concurrently/Approval
This course is designed to prepare the technician to enter the auto repair and service industry. The student will study the operation and repair procedures for manual transmissions and transaxes, manual and hydraulic clutches, drive shafts and half-shafts, rear-axles, front and rear-wheel drive differentials, and four-wheel drive components. (F, Sp)

AUTO 121 Automatic Transmissions
Semester Prerequisite: AUTO 110, AUTO 120/Approval
This course in automatic transmissions is designed to prepare the technician to enter the auto repair and service industry. The student will study the theory of operation, service procedures, problem diagnosis, repair techniques, and overhaul procedures for the following transmissions: GM 125C, 700R4, and the Chrysler A404. (F, Sp)

AUTO 122 Advanced Transmission
Semester Prerequisite: AUTO 121
This course in automatic transmissions is designed to prepare the technician to enter the auto repair and service industry. The student will study the theory of operation, service procedures, problem diagnosis, repair techniques, and overhaul procedures for the following transmissions: Ford AXOD, General Motors 4T60E, and Chrysler 604. (F, Sp)

AUTO 130 Automotive Engines
Semester Prerequisite: AUTO 100, AUTO 110/Concurrently/Approval
This advanced course in engine rebuilding is designed to prepare technicians to enter the auto repair and service industry. The student will disassemble, inspect (using precision measuring tools and specialized equipment), and reassemble an engine. Theory of operation, basic computer technology, and machining procedures are also covered. (F, Sp)
AUTO 133 Small Engine Repair 2.5
Semester Prerequisite: None
This is a basic course covering servicing and repair of two-cycle and four-cycle small gas engines. Each student is required to supply a small engine for laboratory work. (F, Sp, Su)

AUTO 135 Marine Engine Repair 2.5
Semester Prerequisite: None
This course covers the basics of outboard engine servicing including carburetion, ignition, and troubleshooting malfunctions. (F, Sp, Su)

AUTO 140 Automotive Brakes 2.5
Semester Prerequisite: AUTO 100, AUTO 110/Concurrently/Approval
This course prepares technicians to enter the auto repair and service industry. Theory and operation of modern automotive brake systems, hydraulic system diagnostic procedures, and service procedures for disc and drum brake systems will be studied. A brief overview of anti-lock brake systems will also be covered. (F, Sp)

AUTO 150 Automotive Suspension 2.5
Semester Prerequisite: AUTO 100/Concurrently/Approval
This course prepares technicians to enter the auto repair and service industry. The student will study theory, problem diagnosis and repair of suspension and steering components found on both front- and rear-wheel drive vehicles, and adjustment of alignment angles on front- and rear-wheel drive vehicles. (F, Sp)

AUTO 160 Auto Air Conditioning 2.5
Semester Prerequisite: AUTO 100, AUTO 110/Approval
This course in automotive air conditioning service is designed to prepare technicians to enter the auto repair and service industry. The student will study the theory, application, diagnosis, and repair of automotive air conditioning systems. Both mechanical and electronic controlled systems will be studied. (F, Sp)

AUTO 165 General Auto Mechanics 2.5
Semester Prerequisite: None
Automobile owners will gain a better understanding of the automobile and be able to make some repairs. Areas covered include preventive maintenance, tune-ups, brakes, engines, electrical systems, drive lines, front end, and steering. (F, Sp, Su)

AUTO 189 Auto Body Welding/Metal Finishing 5
Semester Prerequisite: None
This course presents metal welding as it applies to auto body repair. Included are gas, arc, and wire-feed welding, brazing, heat shrinking, and plasma arc cutting. This course also teaches basic sheet metal repair, body shop tools and their proper use, along with materials used to repair minor damages. (F, Sp, Su)

AUTO 182 Major Collision Repair 5
Semester Prerequisite: AUTO 180
This course teaches the restoration of a collision-damaged automobile to its original condition, including estimating the total job, glasswork, and painting. Instruction in repair of larger, dented panels with an emphasis on replacing panels. (F, Sp)

AUTO 184 UniBody and Frame Repair 2.5
Semester Prerequisite: AUTO 186
This course is an introduction to the basics of frame straightening, covering aligning the frame, or unibody body to original specifications. Analyzing and gauging damage is included. (F, Sp)

AUTO 185 Basic Auto Painting 2.5
Semester Prerequisite: None
This is an auto painting course designed to teach basic refinishing procedures. The student must refinish at least one panel in acrylic enamel and acrylic lacquer by the end of the course. (F, Sp, Su)

AUTO 186 Advanced Painting 5
Semester Prerequisite: AUTO 185
This course teaches advanced auto painting techniques for spot repair, color matching, and troubleshooting—including auto painting techniques for refinishing a complete auto in enamel and acrylic lacquer. Includes estimating the cost of materials and overhead costs of operating a paint shop. (F, Sp)

AUTO 188 Auto Body Repair and Painting 4
Semester Prerequisite: AUTO 186, AUTO 182, AUTO 186
This is a combined course of auto body repair and painting. It provides an opportunity to practice the techniques learned in Auto Body Welding/Metal Finishing (AUTO 186) and Basic Auto Painting (AUTO 186). (F, Sp, Su)

AUTO 205 Engine Performance/Tune-Up 5
Semester Prerequisite: AUTO 110, AUTO 130
This course prepares technicians to enter the auto repair and service industry. Theory and fundamentals of basic engine tune-up procedures will be studied. This course covers general engine diagnosis, introduction to computerized engine controls, ignition system diagnosis and repair, carburetion and fuel injection, and examination of emission control systems. (F, Sp)

AUTO 225 Automotive Computers 5
Semester Prerequisite: AUTO 110, AUTO 130, AUTO 215
This advanced course in automotive computer systems is designed to train the student in theory and diagnosis of varying automotive engine computer control systems. The systems covered will include ignition, air induction, emission control, exhaust gas recirculation, exhaust gas treatment, intake air temperature control, and early fuel evaporation. (F, Sp)

AUTO 230 Anti-Lock Braking Systems 3
Semester Prerequisite: AUTO 110, AUTO 140, AUTO 225
This course in anti-lock brakes is designed to prepare the student to enter the auto repair and service industry. The theory, application, and diagnosis of Bosch, Tasso, and Kelsey-Hayes anti-lock systems will be studied in detail. The students will also study the basic principles of other various anti-lock systems. (F, Sp)

AUTO 251 Advanced Computer Diagnosis 2
Semester Prerequisite: AUTO 225
This advanced course in automotive computer systems diagnosis is designed to prepare the student to enter the auto repair service industry. The student will study computer diagnosis procedures for General Motors, Chrysler, and Ford vehicles. "Strategy Based Diagnosis" procedures will be emphasized. (F, Sp)

AUTO 280 Automotive Service Laboratory 6
Semester Prerequisite: Approval Required
This laboratory course is designed to provide work experience and develop trade entry skills in general and light-line repair. (F, Sp)

AUTO 285 Automotive Internship 6
Semester Prerequisite: Approval Required
Students are able to earn credits while employed as a technician in auto mechanics, auto body, or diesel heavy equipment repair. A pre-registration interview between the student and department director is required. The director must approve the training station and working conditions. (F, Sp)

AUTO 286 Independent Study in Automotive: 1 Credit 1
Semester Prerequisite: Approval Required
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, and the completion of a written project report. This course cannot be audited. (Su)

AUTO 287 Independent Study in Automotive: 2 Credit 2
Semester Prerequisite: Approval Required
Special research projects and/or individual readings are used to apply personal and professional experience to the academic area of interest. A minimum of 96 hours of work is required, and the completion of a written project report. This course cannot be audited. (F, Sp, Su)

AUTO 288 Independent Study in Automotive: 3 Credit 3
Semester Prerequisite: Approval Required
Special research projects and/or individual readings are used to apply personal and professional experience to the academic area of interest. A minimum of 144 hours of work is required, and the completion of a written project report. This course cannot be audited. (F, Sp, Su)

AVAF - AVIATION AIRFRAME MAINTENANCE

AVAF 125 Aircraft Systems I 2
Semester Prerequisite: Program Approval
The study of fuel management, transfer, fueling, 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
Semester Prerequisite: Program 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
Semester Prerequisite: Program Approval
Covers the inspection, 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  3
Semester Prerequisite: None
This course covers the airframe related subjects necessary for an avionics tech-
mnician. Topics include aircraft structure principles, installation procedures, material
and fastener identification, and antenna installation procedures. Students will work
with sheetmetal and composite structures. (F)

AVAF 134  Aircraft Instruments  2
Semester Prerequisite: Program Approval
Course covers inspection, checking, servicing, troubleshooting, repair of elec-
tronics 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
Semester Prerequisite: Program Approval
This course introduces the procedures for identification, inspection, testing, and
repairing of wood, fabric-covered, and steel sheet metal aircraft. This course also
covers the inspection and removal of conventional rivets, the forming of aircraft
sheet metal, the installation of special rivets and fasteners, and an introduction to ap-
plying finishing materials. (Sp)

AVAF 209  Aircraft Structures II  4
Semester Prerequisite: Program Approval
Covers assembly and rigging of fixed wing and rotary wing aircraft control struc-
tures. Provides practical application in removal, installation, and adjustment of
flight controls by balancing, cable tension, and motion studies. Also includes air-
craft inspection procedures to ensure conformity with flight safety standards. (F)

AVAF 210  Aircraft Structures III  3
Semester Prerequisite: Program Approval
An advanced course covering the inspection, repair, lay out, bending, and assem-
blly of aircraft sheet metal. Inspection, testing, and repair of fiberglass, plastics,
honeycomb, and composites and laminated structures is 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
Semester Prerequisite: Program Approval
The intermediate aviation electrical course concentrating on the theory, calcula-
tion, and measurement of A.C. electrical systems. Includes reading and interpret-
ing aircraft electrical circuit diagrams, including those with solid-state devices and
logic functions. Also the installation, checking, and servicing of airframe and
engine wiring, switches, indicators, and protective devices is covered. (Sp, Su)

AVAF 212  Aircraft Electrical II  4
Semester Prerequisite: Program Approval
Study of the repair of airframe and engine electrical system components with
emphasis on the inspection, checking, servicing, and repair of alternating and
direct current systems. Also, general troubleshooting techniques are practiced with
special emphasis on A.C. and D.C. electrical systems. (Su)

AVAF 246  National Airframe Certification Procedures  1
Semester Prerequisite: Program 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)

AVAF 252  Helicopter Maintenance I  3
Semester Prerequisite: Program Approval
Covers the theory of flight, structural design, and systems of helicopters. Also
studies maintenance practices used in the construction, inspection, and repair of
helicopters. (F, Sp, Su)

AVAF 254  Helicopter Maintenance II  3
Semester Prerequisite: Program Approval
Advanced studies in maintenance practices used in the construction, inspection,
and repair of helicopters. (F, Sp, Su)

AVCE - AVIATION CONTINUING EDUCATION

AVCE 131  VFR Pilot Refresher Seminar  5
Semester Prerequisite: Private Pilot License
This course is designed to update the knowledge of the private pilot. The focus of
the course is on significant changes in Federal Aviation regulations, air traffic con-
trol procedures, and pilot weather briefings. (Sp)

AVEL 130  Avionics Installations  3
Semester 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 Installation and Generation  2
Semester Prerequisite: ELCT 110/AVEL 151 Concurrently
Covers the operational characteristics and operation of basic and specialized test
equipment found in the avionics industry. Students will develop skills in air-
craft wiring diagram and weight and balance calculation. Equipment covered
includes multimeters, oscilloscopes, power supplies, multifunction test generators,
multimeters, and analysis equipment used in the industry. (Sp)

AVEL 151  Avionics Installation and Generation Lab  1
Semester Prerequisite: ELCT 110/AVEL 150 Concurrently
Applicable with basic superhetodyne receiver principles and operation using
block diagrams and component level theory. Various logical troubleshooting tech-
niques are discussed. (Su)

AVEL 191  Receiver Troubleshooting Lab  1
Semester Prerequisite: AVEL 151/AVEL 190 Concurrently
Familiarization with basic superhetodyne receiver principles and operation. Various
logical troubleshooting techniques will be put to practical use in the laboratory. The
student builds and calibrates 40solt meter. The student constructs and installs aircraft
wiring harnesses and complete soldering exercises. Common electronic and spec-
ialized avionics test equipment is used in the lab. (Sp)

AVEL 200  Flight Line Testing  2
Semester Prerequisite: AVEL 150/AVEL 201 Concurrently
A study of the avionics systems found aboard modern aircraft focusing on the
flight line testing of such systems as VHF communications, VHF navigation, ADIF,
radar, autopilots, and others. (F, Sp)

AVEL 201  Flight Line Testing Lab  1
Semester Prerequisite: AVEL 151/AVEL 200 Concurrently
A practical study of the avionics systems found aboard modern aircraft, focusing
on the flight line testing of such systems as VHF communications, VHF naviga-
tion, ADIF, radar, autopilots, and others. (Su)

AVEL 220  Avionics Systems I  3
Semester Prerequisite: AVEL 200/AVEL 221 Concurrently
A study of the communications, navigation, 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 for
the repair of various systems. (F)
AVEL 221 Avionics Systems I Lab 2
Semester Prerequisite: AVEL 220 Concurrently
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 and Regulations 1
Semester Prerequisite: ELECT 112
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 and Regulations for Avionics Technicians 1
Semester Prerequisite: ELECT 112
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
Semester Prerequisite: AVEL 220, AVEL 221 Concurrently
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. Students will have the opportunity to obtain factory certification of the repair of various systems. (Sp)

AVEL 231 Avionics Systems II Lab 4
Semester Prerequisite: AVEL 220, AVEL 221 Concurrently
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
Semester Prerequisite: AVEL 231
Minimum 128 hours per semester as an aviation electronics intern. Independent study, 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
Semester Prerequisite: AVEL 200
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 201 Flight Training I 7.5
Semester Prerequisite: Program Approval
Provides in-flight and ground training in the 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 202 Flight Training II 5
Semester Prerequisite: Program Approval
Provides in-flight and ground training in 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
Semester Prerequisite: Program Approval
Provides instruction in complex, single-engine airplane developing the student's skill at IFR navigation and ATC procedures in en route and terminal environment. (F, Sp, Su)

AVFT 204 Flight Training IV 5
Semester Prerequisite: Program Approval
Provides in-flight and ground instruction in complex airplane developing the student's skill in IFR navigation and ATC procedures in en route and terminal environment. Student will develop skills at performing commercial proficiency flight maneuvers. At completion of course, the student will take practical test for commercial/instrument pilot airplane. (F, Sp, Su)

AVFT 205 CFI Flight Training 3.5
Semester Prerequisite: Program Approval
Provides in-flight and ground training in common primary training and complex airplanes. Student will develop instructional skills necessary to train pilots to certification in accordance with Federal Aviation Regulations. The student will take practical test for Certified Flight Instructor, Airplane upon completion. (F, Sp, Su)

AVFT 206 Flight Instructor Instrument Flight Training 2.5
Semester Prerequisite: Program Approval
Provides in-flight and ground instruction in non-complex aircraft. The student will develop instructional skills necessary to train pilots for the instrument rating. The student will take practical test for the instrument flight instructor rating airplane upon completion. (F, Sp, Su)

AVFT 207 Multi-engine Flight Training 1.5
Semester Prerequisite: Program Approval
Provides in-flight and ground instruction in multi-engine airplane. The student will take multi-engine practical test upon completion. (F, Sp, Su)

AVFT 208 Multi-engine Instructor Flight Training 0.75
Semester Prerequisite: Program Approval
Provides in-flight and ground instruction in multi-engine airplane. Students will develop instructional skills necessary to train students for multi-engine practical test. Student will take multi-engine instructor practical test upon completion of course. (F, Sp, Su)

AVGM - AVIATION GENERAL MAINTENANCE

AVGM 111 Aviation General I 4
Semester Prerequisite: Program 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 mechanics. (F, Sp)

AVGM 112 Aviation General II 6
Semester Prerequisite: Program Approval
Introduces the Federal Aviation Regulations involving the mechanic's privileges and 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
Semester Prerequisite: Program Approval
This initial aviation electrical course offering instruction in basic electrical theory and its aviation application. It includes the calculation and measurement of voltage, current, resistance, continuity, and power; 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
Semester Prerequisite: Program Approval
This course covers identification and selection of the appropriate aircraft hardware, hand tools, cleaning materials, fluid lines, and non-destructive testing methods. Included is performance of non-destructive testing, precision measurements, aircraft cleaning and corrosion control, fabrication, installation, and testing of fluid lines. (F, Sp)

AVGS - AVIATION GROUND SCHOOL

AVGS 101 Private Pilot Ground School 4
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 4; Writing Level 4; Math: Level 4
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, traffic control procedures, meteorology, navigation, and flight physiology. (F, Sp, Su)

AVGS 121 Aviation Meteorology 4
Semester Prerequisite: AVGS 101/Private Pilot License
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 weather charts, forecasts, and reports, both domestic and international, (ICAO); and make appropriate "go/no go" decisions. (Sp)
AVGS 211 Instrument Pilot Ground School
Semester Prerequisite: AVGS 101/Private Pilot License
This course prepares the student for the successful completion of the FAA instrument rating written examination. The student will learn operation and interpretation of the flight instruments, the use of enroute, 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
Semester Prerequisite: AVGS 101/Private Pilot License
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 Instructor Ground School
Semester Prerequisite: Program Approval
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)

AVR - AVIATION INSTRUMENT REPAIR

AVR 140 Avionics Instruments I
Semester 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, Sp, Su)

AVPP - AVIATION POWERPLANT MAINTENANCE

AVPP 185 Preventive Maintenance
Semester Prerequisite: None
This course will cover the items described in the Federal Aviation Regulation Part 43, Appendix A, titled Preventive Maintenance. These items include the removal and installation of tires, servicing of wheel bearings, and cleaning fuel and oil strainers or filter elements. The safety, responsibility, and operations of various aircraft systems will be discussed. (F, Sp, Su)

AVPP 241 Reciprocating Engine
Semester Prerequisite: Program Approval
Prepares the student for inspection, servicing, repair, and troubleshooting of reciprocating engines. This course also covers the installation and installation of reciprocating engine lubrication systems. (F)

AVPP 251 Reciprocating Engine Systems
Semester Prerequisite: Program 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
Semester Prerequisite: Program Approval
This course covers the operation, analysis, inspection, service, and repair of reciprocating engine ignition systems and components. This includes magneto, ignition harnesses, spark plugs, and starter systems. (F, Sp)

AVPP 255 Reciprocating Induction Systems
Semester Prerequisite: Program Approval
Study and analysis of reciprocating engine fuel systems and components. Includes inspection, checking, servicing, troubleshooting, and repair of carburetors, fuel 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
Semester Prerequisite: Program 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
Semester Prerequisite: Program Approval
Covers the theory of operation and design of the various turbine engine and turbine-driven auxiliary power unit types including the induction and cooling systems of each. (F, Sp)

AVPP 261 Turbine Engine II
Semester Prerequisite: Program Approval
Covers the theory of operation and design of the various turbine engine and turbine-driven auxiliary power unit types including the induction and cooling systems of each. (F, Sp)

AVPP 263 Turbine Engine Systems
Semester Prerequisite: Program Approval
Covers the inspection, servicing, repair, and troubleshooting of reciprocating and diesel engine electrical and mechanical systems. (F, Sp)

AVPP 265 Powerplant Instruments
Semester Prerequisite: Program Approval
Covers the theory of operation and design of the various turbine engine and turbine-driven auxiliary power unit types including the induction and cooling systems of each. (F, Sp)

AVPP 267 National Powerplant Certification Procedures
Semester Prerequisite: Program 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 prerequisites to receiving authorization to take the powerplant national certification test administered by representatives of the Federal Aviation Administration. (F, Sp)

AVST - AVIATION SIMULATOR TRAINING

AVST 211 Flight Simulator I
Semester Prerequisite: AVGS 101/Concurrently
Provides flight simulator and ground training to develop student's basic attitude instrument flying skills. Course is intended to be taken concurrently with AVFT 211. Simulator used is GAT-1 (or other approved simulator). (F, Sp, Su)

AVST 212 Flight Simulator II
Semester Prerequisite: AVGS 101, AVST 211
Provides flight simulator and ground training to develop student's skills in IFR navigation and approach procedures. Course is intended to be taken concurrently with AVFT 212. Simulator used is GAT-1 (or other approved simulator). (F, Sp, Su)

AVST 213 Flight Simulator III
Semester Prerequisite: AVGS 211, AVST 212
Provides flight simulator and ground training to further develop student's skills in IFR navigation and approach procedures. Course is intended to be taken concurrently with AVFT 213. Simulator used is GAT-1 (or other approved simulator). (F, Sp, Su)

AVST 214 Flight Simulator IV
Semester Prerequisite: AVGS 211, AVST 213
Provides flight simulator and ground training to further develop student's skills in IFR navigation and approach procedures. Course is intended to be taken concurrently with AVFT 214. Simulator used is GAT-1 (or other approved simulator). (F, Sp, Su)
AVST 215 Multi-engine Flight Simulator
Semester Prerequisite: AVST 214
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 flight training multi-engine simulator. (F, Sp, Su)

BCDS - BUSINESS DEVELOPMENT SEMINARS

BCDS 201 Starting a Business
Semester 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)

BCDS 202 Pitfalls to Avoid When Opening or Operating a Business
Semester Prerequisite: None
This seminar, presented by a successful businessperson, 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)

BCDS 205 Systems for Record Keeping
Semester 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)

BCDS 209 Financial Management for Small Business
Semester 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 statements, and cash flow statements. (F, Sp, Su)

BCDS 210 Customer Relations
Semester Prerequisite: None
Anyone who sells, gives, 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)

BCDS 211 Advertising for Small Business
Semester 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)

BCDS 215 Developing a Marketing Plan
Semester 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)

BCDS 225 Writing a Business Plan
Semester 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)

BCDS 230 Small Business Taxes
Semester 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)

BIOI - BIOLOGY

BIOI 121 Biology
Semester Prerequisite: Chemistry Recommended
Basic Skills Prerequisite: Reading Level 4; Writing Level 4; Math Level 4
Topics include organic molecules, biological molecules, enzymes, metabolism, cell structure and function, passage of materials across membranes, harvesting energy, mitosis, meiosis, introductory genetics, and the relationship between DNA, RNA, and protein synthesis. (F, Sp, Su)

BIOI 127 Cell Biology
Semester Prerequisite: CHEM 120/CHM 125/High School Chemistry
Basic Skills Prerequisite: Math Level 4
One of two biology courses for science majors. 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)

BIOI 128 Organizational Biology
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 5; Writing Level 4; 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. (Sp, Su)

BIOI 210 Natural Resource Conservation
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 5; Writing Level 4
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)

BIOI 250 Botany
Semester Prerequisite: 1 Semester of Biology Recommended
An introduction to the study of plants that includes structure and function, development, and ecophysiology. Emphasis will be placed on the diversity of plants and the life cycles of major plant groups. Laboratory will complement the basic concepts with emphasis on physiology, systematic, and species of value to medicine and agriculture. (Sp)

BIOI 255 Zoology
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 5; Writing Level 5
Begins with an introduction to heredity, population genetics, the theory of evolution, and ecology. Focuses principally with the taxonomy and comparative anatomy of members found within the major animal phyla. A phylogenetic approach is used to study the various animal phyla from protozoa through chordata. (Sp)

BIOI 270 Human Genetics
Semester Prerequisite: BIOI 121/Equivalent
Basic Skills Prerequisite: Math Level 5
Presents general principles of genetics with specific human application. Topics include Mendelian genetics, mitosis and meiosis, chromosome structure and aberrations, sex determination and X-Y linkage, molecular basis of inheritance, gene mutations, genetics of immune system, cancer genes, recombinant DNA technology, and genetic screening and counseling. (Sp)

BIOI 275 Molecular Biology I
Semester Prerequisite: BIOI 127, CHEM 161/Departmental Approval
Basic Skills Prerequisite: Reading Level 5; Writing Level 4; 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, cultivating bacteria, isolating and purifying both bacterial and plasmid DNA, restriction enzyme digestion of DNA, and agarose gel electrophoresis analysis of DNA. Field trip to research laboratories. (F)

BIOI 276 Molecular Biology II
Semester Prerequisite: 2.0 Minimum in BIOI 275/Departmental Approval
Basic Skills Prerequisite: Reading Level 5; Writing Level 4; Math Level 4
Continuation of BIOI 275. Advanced lecture topics in bacteriology, biophysics, 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)
BLDT 103 Structural Blueprint Reading
Semester Prerequisite: None
This course covers symbols, conventions, and abbreviations used in structural blueprints. The students 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 and Foundations
Semester 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. This course covers the various types of foundations and the advantages and disadvantages of each. Hands-on methods are used. (F, Sp)

BLDT 124 Remodeling, Shingling, and Siding
Semester Prerequisite: BLDT 121
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
Semester Prerequisite: BLDT 121
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 127 Framing Square and Stair Layout
Semester Prerequisite: None
This course covers the proper use of the framing square. Students will lay out common, hip, valley, and jack rafters. Layouts will also include gable and stud, cross bridging, and stair stringers. Instruction will emphasize understanding of math and dimensional conversions involved in using the square. (F, Sp, Su)

BLDT 202 Builders Business License
Semester Prerequisite: None
This course covers the principles of residential building organizations and business practices, along with other useful information to help students pass the State of Michigan Builders' 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
Semester Prerequisite: BLDT 103
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 BOCA/Uniform Code
Semester Prerequisite: None
Students will be introduced to the two most commonly used building codes in the United States. This course will emphasize the use, interpretation, and application of the Uniform and BOCA Building Codes. Requirement for materials, barrier-free design, and fire standards for residential and commercial construction will be emphasized. (F, Sp)

BLDT 285 Residential Building Internship
Semester Prerequisite: BLDT 121, Approval Required
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)

BLDT 296 Ceramic Tile Seminar
Semester 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
Semester 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 118 – CABS 113

BUSN 116 Introduction to Business
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 5; Writing Level 4
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 in Management
Semester Prerequisite: Departmental 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 18 hours work required, plus completion of written project report. (F, Sp, Su)

BUSN 192 Independent Study in Management
Semester Prerequisite: Departmental 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 18 hours work required, plus completion of written project report. (F, Sp, Su)

BUSN 193 Independent Study in Management
Semester Prerequisite: Departmental 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 18 hours work required, plus completion of written project report. (F, Sp, Su)

BUSN 201 International Business
Semester Prerequisite: BUSN 118/Equivalent
Overview of international business: organizational, social, cultural, and economic variables that create change in the international marketplace. Includes exchange rates, resource allocation, import duties, and trade issues. (F, Sp, Su)

BUSN 229 Public Relations
Semester 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)

BUSN 250 Personal Finance
Semester 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 261 Stock Market Essentials
Semester 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 252 Personal Financial Planning
Semester Prerequisite: None
This course provides students with practical information to guide personal financial decisions. It is designed to facilitate learning the process of financial planning to help students make informed choices about financial matters. (Sp)

BUSN 254 Introduction to Investments
Semester 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 255 Advanced Investments
Semester Prerequisite: BUSN 254
Students will use their knowledge of investment options to develop and implement a personal investment strategy. Investment objectives and influencing factors will be examined. (Sp)

BUSN 270 Updating Employee Policies—A Legal Perspective
Semester Prerequisite: None
This seminar provides a comprehensive review of recent developments in employment laws and court decisions in which employer policies and employee handbooks. Topics will include employment at will and just-cause standards, EEO/AA policies, handicap accommodations, wage and hour rules, work rules, and benefits. (F, Sp, Su)

BUSN 295 Small Business Management
Semester 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 Seminar: Special Subjects
Semester 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)

CABS 101 Beginning Keyboarding on the Computer
Semester Prerequisite: None
This course is designed for students having no previous typing experience. Basic keyboarding skills using the touch method for the microcomputer operator are developed. Emphasis is on speed and accuracy using the alphanumeric keys, the figure keys, the symbol keys, and the number pad. Skilled level of 39 wpm is developed. (F, Sp)

CABS 102 Microcomputers for Non-majors
Semester 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)

CABS 104 Skillbuilding for Computers
Semester Prerequisite: Previous Keyboarding
This course is designed to develop speed and accuracy at the keyboard and to individualize the development for each student. (F, Sp)

CABS 105 WordPerfect for the Office/Intermediate Keyboarding
Semester Prerequisite: CABS 101/CABS 104/Equivalent
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 using WordPerfect software for the rapid production, revision, and retrieval of routine business documents, such as letters, envelopes, memorandums, reports, outlines, and tabulated material. (F, Sp)

CABS 110 Microsoft Office
Semester Prerequisite: Windows, 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, spreadsheets, database, and presentation software. Topics include creating letters, memos, simple spreadsheets, database structures, and desktop presentations. (F, Sp)

CABS 112 Advanced WordPerfect for the Office
Semester Prerequisite: 2.0 Minimum in CABS 105/CABS 111/Equivalent
In addition to building speed and accuracy on the computer, this course is designed to develop an advanced word processing skill using WordPerfect software for the rapid production, revision, and retrieval of medical and legal documents, manuscripts and reports, and business publications. (F, Sp)

CABS 113 Microsoft Word for the Office/Intermediate Keyboarding
Semester Prerequisite: CABS 101/CABS 104/Equivalent
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 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)
CABS 114 - CABS 180

CABS 114  WordPerfect - Beginning for DOS  2
Semester Prerequisite: Keyboard Familiarity
Beginner-level instruction on use of WordPerfect. Topics include creating, editing, formatting, and storing word processing documents. Also learned are the use of the block technique, spell-checker, thesaurus, merge feature for form letters, and maintaining files. Excessive hands-on activity. (F, Sp, Su)

CABS 115  WordPerfect - Advanced for DOS  2
Semester Prerequisite: CABS 114
Instruction in the use of WordPerfect features such as macros, tables, columns, footnotes and endnotes, indexes, lists, table of contents, outline, boxes, graphics, and fonts. Includes techniques for improving the appearance of documents produced through use of appropriate fonts and other print capabilities. (F, Sp)

CABS 117  Microcomputer Forms Design  2
Semester Prerequisite: None
This course covers the development and composition of business forms using forms design software on a microcomputer. Additional topics include forms layout, merging, type styles, grades of paper, construction, reproduction, specifications, and forms management. (F, Sp)

CABS 118  Advanced Microsoft Word for the Office  4
Semester Prerequisite: 2.0 minimum in CABS 113/Equivalent
In addition to building speed and accuracy on the computer, this course is designed to develop advanced word processing skills using Microsoft Word software for the rapid production, revision, and retrieval of medical and legal documents, manuscripts, and reports, and business publications. (F, Sp, Su)

CABS 119  Word for Windows  2
Semester Prerequisite: Windows, Keyboard Experience
This course is designed to provide the person how to use 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 performing mail merge and creating tables. (F, Sp)

CABS 121  WordPerfect for Windows  2
Semester Prerequisite: Windows, Keyboard Experience
Provides instruction in the use of WordPerfect for Windows. Topics include creating, editing, formatting, and storing word processing documents. Also learned are the use of the block technique, spell-checker, thesaurus, merge feature for form letters, and other related skills. (F, Sp, Su)

CABS 122  Lotus 1-2-3 Self Taught  2
Semester Prerequisite: None
An introduction to using the Lotus 1-2-3 spreadsheet, graphics, and database management program. The course uses a variety of teaching techniques such as videotape and computer-assisted instruction. Provides hands-on experience in creating spreadsheets, producing graphs and reports, and searching and sorting databases. (F, Sp, Su)

CABS 123  Lotus 123 for DOS  2
Semester Prerequisite: None
Provides the student with a working knowledge of the Lotus 1-2-3 spreadsheet program and enables the student to apply Lotus to routine business problems. Topics include spreadsheet navigation, basic functions, spreadsheet formatting, formulas, special functions, move, copy, and an introduction to graphs, macros, and databases. (F, Sp, Su)

CABS 124  Advanced Lotus Release 2 for DOS  2
Semester Prerequisite: CABS 122/CABS 123
Expands the students' working knowledge of Lotus 1-2-3 by providing experience in applying advanced features of the program to routine business problems. Topics include an in-depth study of macros, database management, graphs and charts, data tables, user defined menus, and custom help screens. Uses release 2 of Lotus 1-2-3. (F, Sp)

CABS 126  Excel  2
Semester Prerequisite: Windows, Keyboard Experience
Beginner-level training in the creating of spreadsheets and databases using the Microsoft Excel spreadsheet. 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 127  Quattro Pro  2
Semester Prerequisite: Windows, Keyboard Experience
Beginner-level training for the Quattro Pro spreadsheet program that provides the student with skills needed to apply Quattro Pro to routine business problems. Topics include basic operating concepts, functions, macros, and graphing. (F, Sp)

CABS 128  Lotus 123 for Windows  2
Semester Prerequisite: Windows, 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 data bases; creating macros; and using multiple worksheets. (F, Sp)

CABS 129  Excel-Advanced  2
Semester Prerequisite: CABS 126
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)

CABS 130  dBASE for Non-majors for DOS  2
Semester Prerequisite: None
This course is designed for the person who uses an existing dBASE program or who needs to develop a simple database. Students learn how to create database structures, enter and edit data, manipulate the data, and prepare printed reports. The programming mode is not addressed in this course. (F, Sp, Su)

CABS 132  Paradox Database  2
Semester Prerequisite: Windows, Keyboard Experience
This course is designed for the person who uses an existing Paradox database or who needs to develop a simple database application with Paradox. Students learn how to create database structures, enter and edit data, find data, and prepare printed reports. Students learn how to use the Paradox Personal Programmer (Sp)

CABS 133  Microsoft Access Database  2
Semester Prerequisite: Windows, Keyboard Experience
This course is designed for the person who uses an existing Microsoft Access database or who needs to develop a simple database application with Microsoft Access. Students learn how to create database structures, enter and edit data, find data, and prepare printed reports. (F)

CABS 134  FoxPro database for Windows  3
Semester Prerequisite: None
This course provides practical, hands-on experience using a database management software. Activities allow the student to create, maintain, search and retrieve records, and create reports using the software FoxPro for windows. (F, Sp, Su)

CABS 135  FoxPro for Windows  2
Semester Prerequisite: None
This course is designed for the person who needs to develop a simple database. Students learn how to create database structures, enter and edit data, manipulate the data, and prepare printed reports. The programming mode is not addressed in this course. (F, Sp, Su)

CABS 140  Business Graphics Using Harvard Graphics  2
Semester Prerequisite: Windows, Keyboard Experience
This course uses the microcomputer as a tool to create and present information in a graphic form. Students learn to determine the most appropriate type of chart or graph to communicate specific kinds of information. They use Harvard Graphics software to produce and present information. (F, Sp)

CABS 141  Business Graphics and Presentation  2
Semester Prerequisite: None
Graphics software is used to develop bar, line, and pie charts. Change features, such as type fonts, size, shading, and other formats are included. Graphics are created from spreadsheet information. Instruction is given on the elements of a presentation. (F, Sp, Su)

CABS 180  Desktop Publishing Using Pagemaker  3
Semester Prerequisite: Windows, Keyboard Experience
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)

LANSING COMMUNITY COLLEGE 1997-98  183
CABS 182 Microsoft PowerPoint/Windows 2
Semester Prerequisite: Windows, Keyboard Experience
MS PowerPoint for Windows is designed to give your computer the capabilities for desktop presentations. The user will learn to plan, compose, and create complete presentations. MS PowerPoint makes it easy for the individual to present professional, high quality presentations. (F, Sp, Su)

CABS 195 Microsoft Windows 2
Semester Prerequisite: None
This course is for a novice in the use of the Microsoft Windows environment. Topics include the use of Windows features (icons, dialog boxes, etc.), functions (program manager, file manager, print manager, control panel), and applications included with Windows (Write, Paintbrush, Accessories, Recorder, Terminal). (F, Sp, Su)

CABS 210 Advanced Microsoft Office 3
Semester Prerequisite: CABS 110
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, Su)

CABS 219 Advanced Microsoft Word 2
Semester Prerequisite: CABS 119
Advanced level training in word processing using the Microsoft Word program. The instruction includes formulates, tables, using and defining styles, using graphics, creating forms, and advanced font and text formatting. (F, Sp, Su)

CABS 221 Advanced Desktop Publishing, Integration of Office Software 4
Semester Prerequisite: Departmental Approval
This course is designed as an office simulation that incorporates all the automated office skills learned. Students show appropriate document creation integrating word processing, graphics, spreadsheets, database applications, importing, exporting, and advanced desktop publishing techniques. (Sp)

CABS 233 Advanced Microsoft Access 2
Semester Prerequisite: CABS 133
Advanced level training in the creation of database management using the Microsoft Access Program. The instruction includes the manipulation and generation of reports and tables. (F, Sp, Su)

CABS 282 Advanced Microsoft PowerPoint 2
Semester Prerequisite: CABS 182
A sequel to CABS 182, this course provides advanced level training using Microsoft PowerPoint. Students will design and present professional high quality presentations. Emphasis will be placed on planning and making color changes, importing, applying group/ungroup, and integrating sound and movie clips into Microsoft PowerPoint. (F, Sp, Su)

CABS - COURTS AND CONFERENCE REPORTING

CABS 101 Machine Shorthand Theory I 6
Semester Prerequisite: Admission to Program
This course is specifically designed for conflict-free theory, taught on a steno machine to develop notetaking accuracy from 95 to 100 percent, and speeds up to and including 70 wpm for five minutes. (F, Sp)

CABS 111 Machine Shorthand Theory II 6
Semester Prerequisite: CABS 101
This course is specifically designed for conflict-free theory taught on a steno machine to develop notetaking accuracy from 96 to 100 percent and speeds up to and including 100 wpm for five minutes. (Sp, Su)

CABS 121 Introduction to Speedbuilding 5
Semester Prerequisite: CABS 111
This course is specifically designed for machine shorthand speedbuilding in the areas of Q & A and Literary dictation. It will assist students in developing the required speeds of 110 and 120 wpm for five minutes at 97 percent accuracy. (F, Sp)

CABS 205 Court Reporting I 11
Semester Prerequisite: CABS 121
This course includes Literary dictation from 100-140 wpm, Q & A dictation from 130-170 wpm, and Jury Charge dictation from 110-140 wpm. Also included in the course is instruction in CAT (Computer-aided Transcription), vocabulary improvement, and medical terminology. (F, Sp)

CABS 206 Court Reporting II 11
Semester Prerequisite: CABS 205
This course includes Literary dictation from 150-180 wpm, Q & A dictation from 180-230 wpm, and Jury Charge from 160-200 wpm. Also included in the course is instruction in legal vocabulary. (F, Sp)

CABS 215 Intermediate Speedbuilding 6
Semester Prerequisite: CABS 206
This course is designed for machine shorthand speedbuilding in the areas of Q & A, Literary, and Jury Charge dictation. It will assist the students in developing the required speeds levels. (Su)

CABS 225 Advanced Speedbuilding I 4
Semester Prerequisite: CABS 215
This course is taught concurrently with Court Reporting I (CABS 205) for students who need an additional semester to reach required speeds. It includes the Literary and Q & A speedbuilding and timing portions of CABS 205. This course can be waived if the student has already attained the speed requirements mandated by the National Court Reporters Association. (F, Sp)

CABS 226 Advanced Speedbuilding II 4
Semester Prerequisite: CABS 215
This course is taught concurrently with Court Reporting II (CABS 206) for students who need an additional semester to reach required speeds. It includes the Q & A, Literary, and Jury Charge speedbuilding and timing portions of CABS 206. This course can be waived if the student has already attained the speed requirements mandated by the National Court Reporters Association. (Sp, Su)

CABS 250 Internship 2
Semester Prerequisite: Instructor Approval
Students placed in this field work will spend 200 hours with official reporters, depository reporters, and hearing reporters writing, transcribing notes in proper form, and producing 200 pages of transcript in order to learn courtroom, conference, hearings, and deposition techniques, procedures, and transcript production. (F, Sp)

CABS 260 CSR Preparation .5
Semester Prerequisite: CABS Student/Reporter
This training and practice class is designed to prepare the Court and Conference Reporting student for the Certified Shorthand Reporter Examination using goal setting projects, speedbuilding material, five-minute timings (Literary at 180 words per minute and 1.8 syllable intensity, Jury Charge at 230 words per minute, Q & A at 225 words per minute), and written knowledge test handouts. (F, Sp)

CABS 270 Realtime Reporting 1
Semester Prerequisite: CABS Student/Reporter
This course consists of instruction in realtime reporting as related to people with disabilities through lectures, videotapes, and hands-on applications. (F, Sp)

CHCE - CONTINUING HEALTH CAREERS

CHCE 101 Nurse Refresher 9
Semester Prerequisite: Current Michigan License
For the inactive RN or LPN who would like to re-enter active practice. Includes theory and practice in nursing care, pharmacology, selected disease processes, and new concepts in delivery of health care. Clinical component is included. (F, Sp)

CHCE 105 Suicide Seminar: Assessment and Prevention .5
Semester Prerequisite: None
This seminar covers demographics, attitudes, and theories regarding suicide. Assessment skills for identifying suicidal potential, interventions for the prevention of suicide, videotapes, case studies, and group discussions are used to increase awareness regarding suicide, in addition to gaining insight in recognition, assessment, and prevention of suicide. (F, Sp)

CHCE 106 Cardiac Dysrhythmia Interpretation 2.75
Semester Prerequisite: Health Professional
This course introduces the student to identification of common dysrhythmias seen on a monitor or telemetry unit. Content will include criteria, causes, hemodynamics effects, and treatment of dysrhythmias according to ACLS guidelines. Use of monitoring equipment is integrated within the course content. (F, Sp, Su)
CHCE 107 Community Resources for Health Professionals .75
Semester Prerequisite: None
A course designed to help health care professionals identify and utilize community resources for their client population. Material will be presented through lecture by representatives of various local health care providers for clients and/or families. (F, Sp)

CHCE 112 Dental Auxiliary X-ray 1.5
Semester Prerequisite: Dental Auxiliary with One Year Experience/Departmental Approval
This course is designed for the dental auxiliary to update his or her skills and gain knowledge in making intraoral radiographs of diagnostic quality. Includes theory and laboratory sessions in exposing, processing, mounting, and evaluation of radiographs. Upon successful completion, the student receives a certificate of completion. (F, Sp, Su)

CHCE 114 Physical Assessment Skills for Nursing Practice 2.5
Semester Prerequisite: RNL/PN/Nurse
This course is designed to teach specific skills necessary for physical examinations and diagnostic techniques. Includes such concepts as body mechanics, palpation, percussion, and auscultation. (F, Sp, Su)

CHCE 115 Physical Assessment Refresher 0.75
Semester Prerequisite: CHCE 114/Equivalent
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 for supervised practice sessions, to improve specific techniques of physical examination. (F, Sp, Su)

CHCE 117 Physical Assessment Techniques for the Corrections Nurse 2.75
Semester Prerequisite: Corrections Nurse/EMT
This course is designed for corrections nurses on the McPherson campus. The course focuses on the physical examination techniques specific to corrections nurses. Topics include body mechanics, palpation, percussion, and auscultation. (F, Sp, Su)

CHCE 182 Acute Trauma/Emergency Nursing Seminar 2
Semester Prerequisite: RNL/PN/EMT/EMT
This course is designed for registered nurses and emergency medical technicians currently employed by the hospital and the Department of Public Safety. It focuses on the assessment and management of acute trauma in the emergency department. (F, Sp, Su)

CHCE 185 Lab Tests for Nurses 0.5
Semester 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. (F, Sp)

CHCE 194 Mental Health Nursing Seminar 1.5
Semester Prerequisite: Registered Nurse
This seminar is designed for mental health nurses currently working with or who will work with clients with emotional problems. Students are taught the content for a mental health status assessment, therapeutic communication techniques, psychotropic medications, patient teaching techniques, nursing interventions, and the evaluation of client progress. (F, Sp, Su)

CHCE 195 Effective Interaction and Problem Solving Techniques 0.5
Semester Prerequisite: RNL/PN/Allied Health
This seminar stresses application of assertive communication skills. Personality and temperament styles are identified which determine conflict resolution, value clarification, and confrontational skills. Real and theoretical work settings are stressed to assist in effective problem-solving techniques. (F, Sp, Su)

CHCE 196 Geriatric Nursing Seminar 0.5
Semester Prerequisite: Nurse (RNL/PN/Nurse)
This seminar is designed for the nurse working in long-term care facilities. The student investigates concerns of nursing leadership and applies them to his or her own work environment. Issues of staff morale, staff turnover, realistic changes within economic and organization limitations are discussed. (F, Sp)

CHCE 200 Managing Aggressive Behavior 1
Semester Prerequisite: None
This course is designed for staff working where the potential for aggressive behavior exists. The course is aimed at improving the staff's awareness of the causes of aggression and providing useful techniques for managing aggressive behavior. (F, Sp, Su)

CHCE 202 Advanced Nursing Practice Seminar: Medical-Surgical Nursing 3
Semester Prerequisite: RNL/PN/SGN
This course is designed to enhance nurses' knowledge of medical-surgical procedures. It focuses on patient assessment, current treatment modalities, and pharmacology. Specialized monitoring and treatment equipment and procedures are included where applicable. (F, Sp, Su)

CHCE 203 Oncology Nursing Practice 3
Semester Prerequisite: RNL/PN/SGN
This course is designed to provide nurses with an overview of current practices in oncology. It focuses on the diagnosis and treatment of cancer, principles of radiation, chemotherapy, and surgical treatment. (F, Sp, Su)

CHCE 204 Essentials of Home Health Nursing Practice 3
Semester Prerequisite: RNL/PN/SGN
This course is designed to provide nurses with an overview of current practices in home health nursing. It focuses on the diagnosis and treatment of disease processes, principles of radiation, chemotherapy, and surgical treatment. (F, Sp, Su)

CHCE 205 Intravenous Therapy 0.5
Semester Prerequisite: Nurse, Health Care Professional
This workshop will provide the student with basic information on intravenous therapy. (F, Sp)

CHCE 208 Clinical Practice for Professional Nurses 1
Semester Prerequisite: RNL/PN/SGN
This course is designed to provide nurses with hands-on experience in selected areas of practice. (F, Sp, Su)

CHCE 210 Pediatric Advanced Life Support 1.5
Semester Prerequisite: Basic Cardiac Life Support Certification/Health Professional
This seminar is designed for pediatric professionals who work with pediatric patients. It stresses critical thinking skills in the care of critically ill and injured children. (F, Sp)

CHCE 211 Pediatric Advanced Life Support (PALS) Refresher 0.5
Semester Prerequisite: Basic Cardiac Life Support, Pediatric Advanced Life Support Certification
This course is designed to meet recertification requirements. It stresses critical thinking skills in the care of critically ill and injured children. (F, Sp)

CHCE 215 Pediatric Physical Assessment 2.5
Semester Prerequisite: RNL/PN
Course content is designed for any nurse working with children. Students learn norms for stages of physical development and physical findings for each body system. Nurses learn to adapt the physical exam to the age, behavior, and ability of the child. (F, Sp, Su)
CHCE 218 Nursing Licensure Exam Preparation for RN-NCLEX and NLN Exams 2.25
 Semester Prerequisites: Graduate Nurse: Diploma/ADN/BSN
 This review course helps the graduate nurse organize and study important nursing care topics arranged by specialty: obstetrics, medical-surgical, pediatrics and psychiatric nursing, nursing management, patient care decisions, treatment protocols, patient teaching, pharmacology, nutrition, and test taking strategies are included. Students take mock exam and multiple practice tests. (Sp, Su)

CHCE 222 Essentials of Emergency/Critical Care/Spacility Care Nursing 6
 Semester Prerequisite: RN/LPN/GN/NSM/MT
 This course embodies intensive education and training for nurses preparing to work in the acute specialty care setting. Physical assessment, recognition, and management of trauma and critical dysfunctional conditions are emphasized. Pharmacology, patient monitoring, and critical decision-making in simulations are included. Take concurrently with CHCE 208. (F, Sp, Su)

CHCE 227 New Dimensions in Nursing .5
 Semester Prerequisite: Nurse (RN/LPN/NSM/NS)
 Seminar content is dependent upon course requirement. (F, Sp, Su)

CHCE 228 Nursing Management Strategies 2
 Semester Prerequisite: Health Professional
 This course provides an overview of the management function in a health care setting. It is based on a conceptual understanding of the management functions of planning, organizing, leading, controlling, and dealing with change. Emphasis will be on developing practical skills needed to manage resources and set realistic goals. (F, Sp)

CHCE 229 Nursing Practice Update Seminar .76
 Semester Prerequisite: RN/LPN/Health Professional
 Seminar topics are selected from current medical literature and/or prevailing community needs. Trends and issues in nursing, patient care advances and dilemmas, diagnostic and treatment protocols, medical-legal-ethical considerations, and professional nursing concepts all form the basis for final topic selection. Specialized faculty participate in areas of their expertise. (F, Sp, Su)

CHCE 230 Advanced Cardiac Life Support Training Seminar 1.75
 Semester Prerequisite: Basic Cardiac Life Support Certification/Health Professional/Departmental Approval
 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 234 Mental Health Update .75
 Semester Prerequisite: Nurse
 This seminar is for health care personnel with the need to practice and expand their skills in working with the mentally ill. Content will focus on these areas prioritized by the contracting agency. Various teaching, learning, and testing techniques will be utilized including lecture, role-playing, audio-visual, case studies, and written quizzes. (F, Sp)

CHCE 235 Advanced Cardiac Life Support (ACLS) Refresher Seminar .5
 Semester Prerequisite: Basic Cardiac Life Support; Advanced Cardiac Life Support Certificate
 This seminar is designed for RNs who currently possess a valid Advanced Cardiac Life Support (ACLS) Certification. 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 239 Emergency/trauma Update and Review 1.5
 Semester Prerequisite: RN/LPN/Emergency Care Nurse
 This course is designed for nurses working in the specialty field of emergency/trauma care. It may be used as an update in the current status of emergency/trauma nursing or as an adjunct in helping the emergency nurse prepare for the certification exam. (F, Sp, Su)

CHCE 240 Cardiac Rehabilitation Cognate for Nurse Assistants 2.75
 Semester Prerequisite: CHE 101
 Nurse assistant care of the monitored cardiac patient emphasizes recognition of heart waves, rates, and rhythm arrhythmias; observation of various cardiac procedures; and clinical practice. Care of the cardiac patient is integrated with knowledge of effects of immobility, deconditioning, and aging, and reporting of abnormal behavior or symptoms. (F, Sp, Su)

CHCE 247 Techniques Update Course for RDHs .25
 Semester Prerequisite: Dentist/Dental Hygiene
 This course is designed for the dental hygienist/dentist who wishes the opportunity to gain knowledge and develop the skills needed to perform advanced clinical procedures. (F, Sp, Su)

CHCE 253 Dental Team Concepts .75
 Semester Prerequisite: Dental Office Stuff
 This seminar is designed to update and motivate the dental team with current, practical information on "How to be a Successful, Happy Dental Office in the 90s." Topics include utilization of auxiliaries for maximum productivity, effective scheduling, and communication to break barriers. (F, Sp)

CHCE 255 New Dimensions in Dental Hygiene .5
 Semester Prerequisite: Dental Hygienist/Dental Professional
 Seminar content is dependent upon course requirement. (F, Sp)

CHCE 259 Techniques Update Course for RDAs .25
 Semester Prerequisite: Dental Assistant/Dentist
 This laboratory course is designed for registered dental assistants/dentists who wish a refresher in RDA functions: Utilization concepts, new procedures, advanced techniques, new products, and instruments will be included. (F, Sp, Su)

CHCE 266 Focal Problems and Patient Care Issues in Geriatric Nursing 1.5
 Semester Prerequisite: Nurse (RN/LPN/NSM/NS)
 This specialty course is designed for nurses working with the elderly client in any setting. Common, serious conditions are studied using physical assessment data to identify and document the problem. An overview of normal physical and physiologic changes in the aging client is the framework used to assess abnormal developments. (F, Sp)

CHCE 267 Therapeutic Communications .75
 Semester Prerequisite: Health Professional
 For health professionals with emphasis on the application of communication theory to practice in health care. Communication techniques useful in daily as well as crisis and difficult situations are included. Videotape, film clips, slides, role-playing, and a written assignment are utilized to enhance the student's learning. (Su)

CHCE 273 Registered Nurse Critical Care Core Curriculum 3
 Semester Prerequisite: RN with Medical Surgery Experience
 A course for registered nurses practicing in critical care, preparing to work in critical care and/or considering taking the certification exam. Emphasis is placed on the CCRN core content which includes anatomy and physiology, pathophysiology of selected common conditions, related nursing interventions, and medical management. (F, Sp)

CHCE 282 Dental Auxiliary Seminar .5
 Semester Prerequisite: Dental Auxiliary
 Seminar content is dependent upon course requirement. (F, Sp, Su)

CHCE 285 Dental Office Infection Control .5
 Semester Prerequisite: Dental Personnel/Professional
 Updates dental professionals on effective routine barrier techniques, aseptic procedures, and methods of sterilization to decrease the probability of transmitting disease and inducing infection. Topics include HIV, AIDS, viral hepatitis, MRSA, tuberculosis, herpes simplex, and the safe handling and disposal of infectious and hazardous waste. (F, Sp, Su)

CHCE 286 Dental Specialty Focus .5
 Semester Prerequisite: Dental Auxiliary/Professional
 This seminar will present the most recent information on a variety of dental specialty topics. The seminar is designed for all members of the dental team. Topics include lasers in dentistry, dental contributions to the forensic sciences, and dentistry for the geriatric dental patient. (F, Sp, Su)

CHCE 289 Health Care Risk Management and Quality Review 1.5
 Semester Prerequisite: None
 In this general overview of business writing skills, specific emphasis is placed on writing reports and executive summaries. Conscience, clarity, analyzing and organizing information, and basic principles of good writing are stressed. (F, Sp, Su)
CHCE 290 Dental Hygiene Clinic Remediation 1
Semester Prerequisite: Dental Hygiene Program Director Approval
The students' clinical skills related to the practice of dental hygiene are evaluated for weaknesses and strengths. The student is then guided through the appropriate clinical study activities and evaluated periodically to eliminate the practical skill deficiencies identified. (F, Sp, Su)

CHCE 291 Dental Hygiene Didactic Remediation 1
Semester Prerequisite: Dental Hygiene Program Director Approval
The student's cognitive skills related to the practice of dental hygiene are evaluated for weaknesses and strengths. The student is then guided through the appropriate independent study activities and evaluated periodically to eliminate the knowledge deficiencies identified. (F, Sp, Su)

CHCE 292 Risk Management: Prevention and Reduction of Loss 3
Semester Prerequisite: M.H.A.I.C. Selected, Approval Required
This course provides an overview of the health care system and management functions necessary to control risk/promote quality; skills necessary to develop and maintain an effective loss prevention and risk financing program in a health care setting; health care law, the medical malpractice arena; and claims management principles. (F)

CHCE 293 Quality Review: Performance Evaluation and Process Improvement 3
Semester Prerequisite: M.H.A.I.C. Selected, Approval Required
This course covers history of quality assurance and the ways QA and QM have become integrated into the current health care system; the role of accreditation (JCAHO) and third party payor (MPHO) in the review of physicians practice and patient care; quality and peer review processes; data management; medical staff governance, credentialing, privileging; quality/risk issues in high risk clinical areas. (Sp)

CHCE 294 Practicum: Health Care Risk Management and Quality Review 2.5
Semester Prerequisite: M.H.A.I.C. Selected, Approval Required
This student will select an approved topic and design an independent study/practicum related to risk management or quality review in their work setting. Each student may choose a CHCE 292, CHCE 293 faculty or an agency staff person as a mentor. A written project report is required from each student. (Sp)

CHCE 295 Health Care Risk Management and Quality Review 1.5
Semester Prerequisite: M.H.A.I.C. Selected, Approval Required
This seminar will highlight a specially selected issue and examine how that issue impacts health care risk management and quality review. (Su)

CHCE 206 Health Care Risk Management and Quality Review Update 1
Semester Prerequisite: M.H.A.I.C. Selected, Approval Required
This seminar will be held yearly for graduates of the Health Care Risk Management and Quality Review program to update their risk management skills and review new issues in loss prevention and quality review. (F)

CHCE 299 Advanced Cardiac Life Support (ACLS) Instructor Seminar 2
Semester Prerequisite: Basic Cardiac Life Support/Advanced Cardiac Life Support Certification
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 recently their ACLS skills at the time of the course. Prior assigned readings are mandatory. (F, Sp, Su)

CHDV - CHILD DEVELOPMENT

CHDV 101 Child Growth and Development: 0-5 years 4
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 3; 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 areas: healthy. (F, Sp, Su)

CHDV 111 Positive Guidance and Communication Skills with Children 4
Semester Prerequisite: None
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)

CHDV 112 Building Relationships with Families in Child Care 2
Semester Prerequisite: None
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. (Sp)

CHDV 113 Health and Safety Issues in Child Care 1
Semester Prerequisite: None
This course examines health and safety issues in child care homes and centers. Topics include understanding and preventing communicable illnesses, bloodborne pathogens, safety equipment and play areas, preventing accidents, and health and safety education. It addresses the CDA competencies of safe, healthy, learning environment. (F)

CHDV 120 Child Care Curriculum: Physical Development 1
Semester 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 areas: physical. Uses seminar format. (Sp)

CHDV 121 Child Care Curriculum: Cognitive and Language Development 1
Semester 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)

CHDV 122 Child Care Curriculum: Creative Development 1
Semester Prerequisite: None
This course examines curriculum and activities which enhance the creative development of children in early childhood programs. Specific information on developmentally appropriate and open-ended activities in the areas of art, music, creative, and dramatic play with a variety of materials are shared. CDA functional area: creative. Uses seminar format. (F)

CHDV 130 Introduction to Child Care 1
Semester 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. (F)

CHDV 131 Family Child Care Management 2
Semester Prerequisite: None
This course presents 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. (Sp)

CHDV 151 Child Development Associate (CDA) Credentialing Preparation 3
Semester Prerequisite: Departmental Approval
This course, and accompanying field work, examines credentialing procedures and competency standards for the national Child Development Associate (CDA) Credentialing Assessment. Students complete the resources file, are observed using the CDA observation instrument, and prepare for the CDA situational assessment. Content of the course covers the functional area of professionalism. (F)
CHDV 184 - CHEM 152

CHDV 184  Children and Stress
Semester 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 185  Preventing Child Sexual Abuse: Teaching Personal Safety
Semester Prerequisite: None
This course explores preventing child sexual abuse through teaching personal safety to children. Topics include the sexual abuse situation, behavioral indicators, appropriate adult responses, legal mandated, 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 186  Children's Self-Esteem and Positive Discipline
Semester 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 188  Caring for Young Children with Special Needs
Semester Prerequisite: None
This course focuses on the special and diverse individual needs of children and their families, including handicapping conditions and cultural diversity 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. (F)

CHDV 189  Helping Children Value Diversity
Semester 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 multicultural and antibias curriculum is emphasized. Seminar format is used. (Sp, Su)

CHDV 190  Child Care Seminars
Semester Prerequisite: None
This seminar provides a variety of topics of special interest to child care providers. (F, Sp)

CHDV 220  Curriculum and Learning Environments for Preschoolers
Semester Prerequisite: 2.5 Minimum in CHDV 101, CHDV 111/Departmental Approval
This course, with field work, explores developmentally appropriate preschool programming which promotes physical, cognitive, language, and social 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. (Sp, Su)

CHDV 221  Infant-Toddler Program Development
Semester Prerequisite: CHDV 101/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. (Sp, Su)

CHDV 222  School-age Child Care Program Development
Semester 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. (Sp, Su)

CHEM 120  Basic General, Organic and Biological Chemistry
Semester Prerequisite: Chemistry Inventory
Basic Skills Prerequisite: Reading Level 5; Writing Level 4; 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, Su)

CHEM 125  Basic Chemistry
Semester Prerequisite: Chemistry Inventory
Basic Skills Prerequisite: Reading Level 5; Writing Level 4; Math Level 4
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
Semester Prerequisite: 2.0 Minimum in CHEM 120/Chem 125
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, hormones, and nutrition. (F, Sp, Su)

CHEM 135  Chemistry in Society
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 5; Writing Level 4; 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, Su)

CHEM 151  General Chemistry Lecture I
Semester Prerequisite: 2.0 Minimum in CHEM 120/High School Chemistry
Basic Skills Prerequisite: Reading Level 5; Writing Level 4; Math Level 5
The first of a two-semester course 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, thermodynamics, atomic structure, bonding, and modern materials. (F, Sp, Su)

CHEM 152  General Chemistry Lecture II
Semester Prerequisite: 2.0 Minimum in CHEM 151, MATH 121
Basic Skills Prerequisite: Math Level 6
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)
CHIN 115 Conversational Chinese I 3
Semester Prerequisite: None
Designed for people who have little background in the Chinese language and culture but wish to acquire conversational skills. Students will learn proper pronunciation, the four tones of Putonghua—the standard vernacular, basic sentence structure, and practical vocabulary for everyday use. Selected aspects of Chinese culture will be introduced. (F)

CHIN 120 Elementary Chinese I 4
Semester Prerequisite: None
Designed to help students build a foundation of Chinese language learning. Students will develop the basic skills in the areas of speaking, listening, reading, and writing. Different aspects of the Chinese culture will be introduced. (F)

CHIN 122 Elementary Chinese II 4
Semester Prerequisite: CHIN 101/CHIN 121 (Equivalent)/Approval
Second course of a two-semester sequence in elementary Chinese. Further work on the four basic skills in the areas of speaking, listening, reading, and writing, with increasing emphasis on vocabulary building, conversation, and character writing. Different aspects of the Chinese culture will be discussed. (F, Sp, Su)

CHIN - CHINESE

CHEM 151 General Chemistry Laboratory I 1
Semester Prerequisite: 2.0 Minimum in CHEM 151/Concurrently
Basic Skills Prerequisite: Reading Level 5; Writing Level 4; Math Level 5
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 152 General Chemistry Laboratory II 1
Semester Prerequisite: 2.0 Minimum in CHEM 151, CHEM 152/Concurrently
CHEM 152 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
Semester Prerequisite: 2.0 Minimum in CHEM 151
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 Introductory Organic Chemistry Laboratory 1
Semester Prerequisite: 2.0 Minimum in CHEM 151/Concurrently
Designed for students in majors such as 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)

CHEM 251 Organic Chemistry Lecture I 4
Semester Prerequisite: 2.0 Minimum in CHEM 152
The first lecture course of a two-semester sequence in organic chemistry for chemical engineering, 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)

CHEM 252 Organic Chemistry Lecture II 4
Semester Prerequisite: 2.0 Minimum in CHEM 251
Continuation of CHEM 251. Topics include aromatic compounds, spectroscopy, organometallic compounds, aldehydes and ketones, carboxylic acids and their derivatives, amines, estolates, phenols, carbohydrates, lipids, and proteins. (Sp, Su)

CHEM 272 Organic Chemistry Laboratory 2
Semester Prerequisite: CHEM 251/Concurrently
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. (Sp)

CHS 101 Acute Care Nurse Assistant/Ordinary 6.5
Semester Prerequisite: None
This course will prepare an individual for employment as a nursing assistant/ordinary in a hospital, long-term care facility or home health care agency. The course will provide the knowledge and skills needed to provide safe basic patient care. (F, Sp, Su)

CHS 102 Advanced Acute Care Nurse Assistant 4.5
Semester Prerequisite: CHS 101/CHS 102/Equivalent
This course will prepare an individual for employment as an advanced acute care nursing assistant in an acute care hospital, long-term care facility, or home health care. The course will provide the knowledge and skills needed to perform patient care safely as a skilled nursing assistant. (F, Sp, Su)

CHS 108 Long-Term Care Nurse Aide 4
Semester Prerequisite: None
This course will prepare women and men to be a nurse aide in a long-term care facility. This is a state-approved certified course and will provide specific knowledge and skills required for a nurse aide to safely function in a long-term care facility. (F, Sp, Su)

CHS 111 Medical Insurance Billing I 3
Semester Prerequisite: CHS 111/Equivalent
First course in a two-semester sequence which introduces the student to insurance billing, diagnostic and procedure coding for physician billing, and comprehensive billing instructions for Medicare. The student must have a grade of 2.5, or better, to continue with Medical Insurance Billing II. (F)

CHS 112 Medical Insurance Billing II 3
Semester Prerequisite: 2.5 Minimum in CHS 111
Second course in a two-semester sequence. Course covers comprehensive billing directions for BCBS of Michigan, Medicaid, PHP, and other commercial insurance carriers for billing in the physician's office. A certificate of completion is awarded for Medical Insurance Billing II a grade point of 2.5 or better is earned in CHS 111 and CHS 112. (Sp)

CHS 121 Medical Terminology for Allied Health I 2.5
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 5; Writing Level 5
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)

CHS 122 Medical Terminology for Allied Health II 2.5
Semester Prerequisite: CHS 121
Medical Terminology II will teach the student to utilize medical terminology in context by applying terms to the function and structure of body systems and specific disease conditions. Students will build on knowledge learned in Medical Terminology I. (F, Sp)

CHS 126 Medical Terminology for Insurance Examiners 1.25
Semester Prerequisite: Medical Technician/Insurance Examiner/Approval
Medical terminology is a technically exact vocabulary used by professionals to speak and write precisely. This medical terminology course is designed for insurance examiners and insurance medical technicians. The use of medical terms in records and specific medical areas will be stressed. (F, Sp, Su)

CHS 132 Health Unit Coordinator 7
Semester Prerequisite: CHS 121
Course is designed to introduce the student to basic health 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, Su)

CHS 143 Phlebotomy Technician 2
Semester 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)
CHSE 145 - Central Service Technician
Semester 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, using instruments for use in all departments. Includes principles and practices of decontamination, cleaning, disinfection, sterilization, and distribution of medical/surgical supplies. (F)

CHSE 201 - Dietary Manager I
Semester Prerequisite: Departmental 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 202 - Dietary Manager II
Semester Prerequisite: CHSE 201
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 principals, government regulations, as well as applications to food service, and other related content to become a Dietary Manager. (Sp)

CHSE 205 - Advanced Dietary Therapy
Semester Prerequisite: CHSE 201/Nutrition Class
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 210 - RN State Board Update
Semester Prerequisite: Graduate Nurse: Diploma/ADN/BSN/Department Approval
This course incorporates 12 hours of directed, independent study in basic psychosomatic nursing practice or medical-surgical, obstetrical, or pediatric nursing practice. Students work through progressive, structured activities including home study, class participation, group discussion, and practice tests to challenge critical-thinking skills in complex simulated patient scenarios. (F, Sp, Su)

CHSE 213 - Basic Psychiatric Technician
Semester Prerequisite: None
This course covers concepts of personality development, identification of mental illnesses, patient rights, aspects of confidentiality, therapeutic interventions, and specific means of evaluating patient care. Supervised clinical experience provides opportunities for students to apply classroom material to practical situations. (F)

CHSE 215 - Health Careers Directed Study
Semester Prerequisite: Graduate Nurse: Diploma/ADN/BSN/Departmental Approval
A directed study course for international students and inactive nurses. This course focuses on nursing practice in the American health care system, including use of nursing process, roles, dependent/independent activities, specialty equipment, etc. Observations in local hospitals, lectures, skills practice sessions, and independent study may be used. (F, Sp, Su)

CHSE 222 - Special Transportation Health Care
Semester Prerequisite: Special Transportation Employee/Approval
Course is designed for special transportation personnel, such as drivers who transport medically handicapped or mentally fragile individuals. This course covers various medical diseases and treatments, and provides practice skills pertinent for job performance. (F, Sp, Su)

CHSE 223 - Health Care Seminar - Special Transportation
Semester Prerequisite: Special Transportation Employee/Approval
This course is for special transportation personnel and other human service personnel to teach ways of reducing exposure and transmission of various infectious diseases. The content will include etiology, sources of transmission, and symptoms of various infections: Hepatitis B, HIV and Herpes. (F, Sp, Su)

CHSE 224 - Special Transportation Health Seminar
Semester Prerequisite: None
This seminar is designed as a yearly review and updating of skills in areas of need as designated by the contracting agency. It could include, but not limited to, medical emergencies, airway management and oxygen therapy, communication skills, and physical management of aggressive behavior. (F, Sp, Su)

CHSE 225 - Care of the Medically Fragile Child
Semester Prerequisite: None
This course is designed for health care personnel who work with and/or provide care for the medically fragile child. Content will include diseases and medical conditions common to the fragile child. Basic anatomy and physiology, potential problems, and medications and their side effects will also be covered. (F, Sp, Su)

CHSE 226 - School Bus Health Care
Semester Prerequisite: Special Transportation Employee/Approval
Course is designed for special transportation health care personnel who transport medically handicapped or mentally fragile individuals. This course covers various medical conditions, treatments, and provides practice skills pertinent for job performance. This course includes dealing with aggressive behavior and steps in first aid. (F, Sp, Su)

CHSE 235 - Pharmacy Technician
Semester Prerequisite: MATH 040/MATH 050 Competency
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)

CISB - COMPUTER INFORMATION SYSTEMS FOR BUSINESS

CISB 100 - Introduction to Computer Information Systems
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 3; Writing Level 2
This course provides an introduction to computers, their role in managing business information systems, their influence on society, and their use in personal productivity. A hands-on introduction to major microcomputer tools, including word processing, spreadsheet, and database management applications. (F, Sp, Su)

CISB 102 - Introduction to the Internet in Business
Semester Prerequisite: None
This course is designed to introduce the student to the use and potential use of the Internet for business. Hands-on assignments will allow the student experience using the Internet. (F, Sp, Su)

CISB 104 - Introduction to DOS
Semester 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 work with disk directories and how to create simple batch files. (F, Sp, Su)

CISB 107 - DOS Management
Semester Prerequisite: CISB 104
Advanced concepts in managing a DOS-based operating system. Techniques are presented in the areas of memory, allocation, system organization, batch files, software conflict detection and correction, disk compressed, and virus detection and prevention. Assignments include the use of DOS provided and third-party software in diagnosing and optimizing system performance. (F, Sp, Su)

CISB 119 - Introduction to Windows Programming With Visual BASIC
Semester Prerequisite: MATH 060/MATH 062/Equivalent
This course introduces students to Windows programming using the Visual Basic programming environment. Students learn to develop business applications by designing and creating a user interface and writing the necessary procedures. Students also learn to use logic development tools and object-oriented programming techniques. (F, Sp, Su)

CISB 120 - Introduction to Programming and Logic Using BASIC
Semester Prerequisite: MATH 060(MATH 062/Equivalent)
A first course in computer programming and programming logic for computer information majors and others wanting an intensive introduction to problem-solving techniques using the QuickBASIC programming language. (F, Sp, Su)

CISB 122 - Advanced Windows Programming With Visual BASIC
Semester Prerequisite: CISB 100, 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, sequential and random access files, calling objects from a DLL, and using OLE and MCI in Windows. (F, Sp)
CISB 130  Data Communications 3
Semester Prerequisite: CISB 100, CISB 119/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)

CISB 136  SQL: Structured Query Language 2
Semester Prerequisite: None
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 140  Client/Server Computing 3
Semester Prerequisite: CISB 100, CISB 119/CISB 120
The student will study the various features of the client/server environment including both software and hardware components. Communications technology, network operating systems, and training issues are investigated. Case studies are used. (F, Sp)

CISB 141  PowerBuilder 2
Semester Prerequisite: None
Students will learn how to use PowerBuilder, a graphical client/server application tool. Concepts covered will include the creation of applications, making modifications to the database, working with built-in functions, and creating objects in the graphical user interface environment. (F, Sp)

CISB 143  Oracle Database for Business 2
Semester Prerequisite: CISB 138/CARS 138/Equivalent, Windows Familiarity
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 145  Operations Internship 1
Semester Prerequisite: CISB 100, CISB 119/CISB 120/Approval
This internship provides the student with on-the-job experience as a computer operator. The student may take the second internship concurrently with the first at a different site. This internship requires 150 hours of experience. (F, Sp, Su)

CISB 146  Operations Internship 2
Semester Prerequisite: CISB 145
This internship provides the student with on-the-job experience as a computer operator. The student may take the first internship concurrently with the second at a different site. This internship requires 150 hours of experience. (F, Sp, Su)

CISB 151  Using Lotus Notes 2
Semester Prerequisite: Windows Familiarity
This course introduces the student to groupware using Lotus Notes. Included are the use of E-mail, shared databases, workflow management, mobile computing, and World Wide Web interface. Students use Lotus Notes as the learning tool both in the classroom and to complete course assignments. (F, Sp, Su)

CISB 152  Developing Lotus Notes Applications 2
Semester Prerequisite: CISB 151/Equivalent
A sequel to CISB 151. This course covers the creation of Lotus Notes applications. It includes the use of the development tools provided by Lotus Notes and strategies for developing application databases. Topics include the Lotus Notes editors, macros, user access, installing and maintaining a Lotus Notes database, and use of Lotus Notes on the World Wide Web. (F, Sp, Su)

CISB 170  COBOL I 4
Semester Prerequisite: CISB 100, CISB 120
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 175  Beginning RPG on the AS/400 3
Semester Prerequisite: CISB 100
Develops competence in RPG programming. This course includes problem definition, file definition, control-level processing, physical and logical file processing, and fundamentals of interactive programming. An AS/400 computer will be used and RPG/400 topics covered. (F)

CISB 175  AS/400 Environment 1
Semester Prerequisite: None
This course will provide the student with a customized set of materials about the AS/400 computer environment. The student and instructor will establish the specific course content from the available AS/400 tutorials and IBM Discover/Education courses the first week of class. (F, Sp, Su)

CISB 177  AS/400 Operations 3
Semester Prerequisite: CISB 176
A hands-on course in AS/400 operations. The course will cover the AS/400 architecture and facilities: operational requirements, such as save and restore; hardware elements, software installation, and configurations for local and remote communications, CI, and CMD programming; system problem determination; and problem resolution. (Sp)

CISB 180  C Programming with Business Application 3
Semester Prerequisite: CISB 100, 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 199  Introduction to Business Use of Information Technologies 3
Semester Prerequisite: None
This open entry/open exit course is designed to help the busy professional become better versed in the application of information technologies in the business world. The students may choose from activities providing a basic awareness of information technologies applicable to businesses, through basic hands-on skills in software productivity tools, to CASE-driven analysis and application of business information technology. (F, Sp)

CISB 200  Information Systems Technology and Problem Solving 3
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 5
Fundamental changes have occurred in organizations with the application of computer technology. This course introduces the student to the concept of information 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 practice TQM and work in teams. (F, Sp, Su)

CISB 201  Information Systems Auditing 3
Semester Prerequisite: CISB 100
This course covers basic concepts important in the auditing of computer systems. The use of general and application controls of information systems will be discussed. Other topics include computer crimes, computer ethics, and auditing standards. (F)

CISB 202  Advanced Internet for Business and Education 2
Semester Prerequisite: CISB 102/Equivalent
This course will cover a variety of current Internet and World Wide Web programs to allow the student to compare and contrast different programs. In this course, students will use additional types of Internet software, plan for future changes, and develop advanced strategies involving multiple mediums for using the Internet and Intranets as business and research tools. (F, Sp, Su)

CISB 227  Advanced Concepts in Computer Information Systems 25
Semester Prerequisite: Departmental 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. The course requires a minimum of either eight classroom hours or 12 independent study hours. (F, Sp, Su)

CISB 228  Advanced Concepts in Computer Information Systems 5
Semester Prerequisite: Departmental Approval
With this course, students will learn advanced computer information systems topics, especially those of preparation. Students are required to determine the learning objectives at the first meeting. The course requires a minimum of either 10 classroom hours or 12 independent study hours. (F, Sp, Su)
CISB 229  Advanced Concepts in Computer Information Systems 1
Semester Prerequisite: Departmental Approval
With this course, students 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. The course requires a minimum of either 32 classroom hours or 48 independent study hours. (F, Sp, Su)

CISB 230  Introduction to Local Area Networks 3
Semester Prerequisite: CISB 130
This course in the 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. (F, Sp)

CISB 231  Advanced Local Area Networks 3
Semester Prerequisite: CISB 220/Equivalent
The student in the 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)

CISB 235  Microcomputer Hardware Support 3
Semester Prerequisite: CISB 100, CISB 104, CISB 120
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)

CISB 236  Microcomputer Software Support 3
Semester Prerequisite: CISB 107, CISB 195, CISB 119/CISB 120
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)

CISB 240  Operating Systems 3
Semester Prerequisite: CISB 100, CISB 119/CISB 120
Covers what operating systems are, why they exist, what they do, and how they interface with the operators and programs. Main memory management and processor scheduling are studied. The MS-DOS, Windows, OS/2, UNIX, AS/400, MVS, and VM operating systems are discussed. (F, Sp, Su)

CISB 245  Programming Internship 3
Semester Prerequisite: Departmental Approval
This internship provides the student with on-the-job experience as a computer programmer. Two hundred and eighty 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)

CISB 247  Microcomputer Project 2
Semester Prerequisite: Departmental Approval
With this course, students apply what they have learned about programming and systems development 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 248  Advanced Concepts in Computer Information Systems 2
Semester Prerequisite: Departmental Approval
With this course, students 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. The course requires a minimum of either 32 classroom hours or 46 independent study hours. (F, Sp, Su)

CISB 249  Advanced Concepts in Computer Information Systems 3
Semester Prerequisite: Departmental Approval
With this course, students 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. The course requires a minimum of either 48 classroom hours or 144 independent study hours. (F, Sp, Su)

CISB 259  Database Concepts 3
Semester Prerequisite: CISB 100, CISB 119/CISB 120
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)

CISB 256  Multimedia in Business 3
Semester Prerequisite: CISB 119/CISB 120/ARTS 233
A detailed course covering fundamentals of modern usage of multimedia in business. Students will not only apply problem-solving skills and instructional design techniques to evaluate multimedia applications, they will also develop and modify simple, but practical, multimedia applications and demonstrate skills learned in a multimedia project. (Su)

CISB 257  Multimedia Presentations 2
Semester Prerequisite: CISB 100/Computer Experience
In this course, students develop presentations using one or more presentation tools, such as Powerpoint, and learn how to use clipart, graphics, and AV tools to enhance the presentations. (F, Sp)

CISB 258  Developing Multimedia Home Pages for the WWW 2
Semester Prerequisite: CISB 102/CISB 119/CISB 120/Equivalent Computer Programming Experience
In this course, students will review different types of home pages available on the World Wide Web and recognize the role of multiple media in reaching the apparent goal of the page. Students will develop a simple HTML text based multimedia page. Students will have the opportunity to create graphics and digitized video sequences to enhance their creations. (F, Sp, Su)

CISB 259  Introduction to Developing Multimedia Training 2
Semester Prerequisite: CISB 119/CISB 120/Equivalent Computer Programming in this course, the student will learn how to use rapid prototyping techniques or rapid application development to create multimedia training. (F, Sp)

CISB 260  Systems Analysis and Design 4
Semester Prerequisite: CISB 100, CISB 119/CISB 120
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 261  Systems Implementation with CASE Tools 3
Semester Prerequisite: CISB 260
This course applies the concepts and techniques of systems analysis and design developed in CISB 260 into working systems. Computer-Assisted Software Engineering (CASE) tools will be used to develop a business computer system. Students will be formed into project teams for the course project. (F, Sp)

CISB 270  COBOL II 3
Semester Prerequisite: CISB 170
An advanced COBOL course covering indexed file creation and updating, subprogram concepts, and writing interactive programs using CICS. Copy libraries are used, and a system of related programs is completed as a class project. (F, Sp)

CISB 271  COBOL/400: Implementing the COBOL Language on the AS/400 3
Semester Prerequisite: CISB 170, AS/400 Experience
This course provides the student with information and support necessary to master the implementation of COBOL programming in the AS/400 environment. Students will learn to use the user interfaces and relative file format native to the AS/400 as well as learning how to communicate between programs. (Sp)

CISB 272  Object-Oriented COBOL 3
Semester Prerequisite: CISB 270/Equivalent Work Experience
This course is intended for those already familiar with the COBOL language. It includes the concepts and terminology of object-oriented development and uses object-oriented COBOL as the programming tool. Students will complete assignments using object-oriented COBOL. (F)

CISB 275  Advanced RPG on the AS/400 4
Semester Prerequisite: CISB 175
A detailed course covering fundamentals of the modern RPG programming language. The course will cover RPG/400 programming techniques, modular programming, relational database manipulation and techniques, and system interaction. The course will use an AS/400 computer in the native AS/400 environment. (Sp)
CISB 280 – CJUS 106

CISB 280  C++ Language with OOP
Semester Prerequisite: CISB 100
Students will use the Borland Integrated Environment to become familiar with the C++ programming language and object-oriented programming and design by designing, implementing, and testing programming projects. (F, Sp)

CISB 281  Visual C++ Programming
Semester Prerequisite: CISB 122
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 282  C/400C: Implementing the C Language on the AS/400
Semester Prerequisite: CISB 160, AS/400 Experience
This course provides the student with information and support necessary to master the implementation of C programming in the AS/400 environment. Students will learn to use the user interfaces and relational file format between programming applications. (F)

CISB 287  ICCP Core Exam Review Session 1
Semester Prerequisite: None
Review seminar for the certification exams from the Institute for Certification of Computer Professionals (ICCP). The other two core review seminars are recommended in addition to this seminar, as is the review seminar for either the CCP, CDP, or CSP. This seminar reviews (1) human and organizational framework, and (2) associated disciplines. (Sp, Su)

CISB 288  ICCP Core Exam Review Session 2
Semester Prerequisite: None
Review seminar for the certification exams from the Institute for Certification of Computer Professionals (ICCP). The other two core review seminars are recommended in addition to this seminar, as is the review seminar for either the CCP, CDP, or CSP. This seminar reviews (1) systems concepts and (2) systems development. (Sp, Su)

CISB 289  ICCP Core Exam Review Session 3
Semester Prerequisite: None
Review seminar for the certification exams from the Institute for Certification of Computer Professionals (ICCP). The other two core review seminars are recommended in addition to this seminar, as is the review seminar for either the CCP, CDP, or CSP. This seminar reviews (1) data and information and (2) technology. (Sp, Su)

CIVIL - CIVIL TECHNOLOGY

CIVIL 101  Civil Drafting
Semester Prerequisite: OTDS 100
Civil Drafting is a course which emphasizes traverse and topographical drawing problems. The course will equip the student with skills and line techniques, and the ability to prepare a clear, readable, graphical presentation from rough notes furnished by the survey party. (Sp)

CIVIL 115  Survey Fieldwork
Semester Prerequisite: None
This course consists of fieldwork using surveying equipment and techniques related to construction projects such as cloth tape, drag chain, chaining poles, levels, level rods, and transits. (F, Sp)

CIVIL 120  Surveying
Semester Prerequisite: MATH 114/TECH 101/TECH 110
Introduces basic surveying practices and procedures. The course consists of fieldwork involving the use of surveying equipment and procedures (cloth tape, drag chain, Dumpy level, automatic level, level rods, optical transit, laser level, electronic transit, Total Station) and basic computational techniques (chainage corrections, azimuths, bearings, coordinates, and traverses). (F, Sp)

CIVIL 124  Route Survey
Semester Prerequisite: CIVIL 120, Trigonometry
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 surveyors, total stations, and data collectors. (F, Sp)

CIVIL 131  Traffic Technology
Semester Prerequisite: None
This course introduces the 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)

CIVIL 132  Construction Materials
Semester Prerequisite: MATH 114/TECH 101/TECH 110/Placement Test
Students will study techniques and equipment used in constructing bridges, buildings, highways, and pipelines. Deals with the 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. Comparison of building codes and construction specifications will be covered. (Sp)

CIVIL 135  Soils Technology
Semester Prerequisite: MATH 114/TECH 101/TECH 110/Placement Test
Exploring, sampling, testing, and evaluating subsurface materials and their effect on construction are covered in this course. Introduction to methods of subsurface drainage, soil classifications, and physical properties of soils. Includes discussion, demonstration, and performance with equipment used in density testing. (Sp)

CIVIL 136  Hydrology and Highway Technology
Semester Prerequisite: MATH 114/TECH 101/TECH 110/Placement Test
CIVIL 131
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)

CIVIL 200  Civil Mathematics
Semester Prerequisite: MATH 114/TECH 101/TECH 110/Placement Test
This course covers the applications of differential calculus and integral calculus to practical technical problems. Topics include related rates, maximum and minimum problems, and areas under curves. (Sp)

CIVIL 241  Statics and Strength of Materials
Semester Prerequisite: CIVIL 200/Math Placement Test
This course introduces structural terminology and concepts. The 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 forcings, conditions of stability and equilibrium in structural frames, and free body analysis for reactions and member forces are considered in the course. (Sp)

CJUS - CRIMINAL JUSTICE

CJUS 101  Introduction to Criminal Justice
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 6; Writing Level 6
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
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 6; Writing Level 5
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
Semester Prerequisite: CJUS 101
Study of substantive criminal law. Includes classification of crimes, common law concepts, and elements of specific crimes. (F, Sp, Su)

CJUS 106  Juvenile Problems: Control and Prevention I
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 6; Writing Level 5
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. (F, Sp, Su)
CJUS 130 Local Detention
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 5; Writing Level 5
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 housing inmates are also covered. (F, Sp)

CJUS 131 Introduction to Corrections
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 5; Writing Level 5
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, So)

CJUS 133 Juvenile in Corrections
Semester Prerequisite: None
Legal aspects of the juvenile court process, detention center supervision, and juvenile after-care will be examined. Both public and private agencies will be discussed in the treatment of the juvenile offender. (F, Sp, Su)

CJUS 134 Probation and Parole
Semester Prerequisite: CJUS 101/CJUS 131
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-sentencing reports. (F, So, Su)

CJUS 135 Legal Issues in Corrections
Semester Prerequisite: CJUS 131
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 170 Emergency Dispatching I
Semester Prerequisite: None
This course has been designed to introduce the student to the history and role of the telecommunicator, equipment systems utilized in dispatching, the correct spelling of police/fire/medical terminology, stress management, legal issues, reference sources, emergency plans, history of police/fire/EMS services, and hazardous materials. (F, Sp)

CJUS 171 Emergency Dispatching II
Semester Prerequisite: CJUS 170
This course has been designed to introduce the student to effective communication skills, dispatch techniques, first aid and CPR techniques, telephone techniques, call-take processing, and emergency medical dispatching. Simulation exercises are included. (F, Sp)

CJUS 201 Criminal Justice Organization and Administration
Semester Prerequisite: CJUS 101
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)

CJUS 203 Criminal Procedure
Semester Prerequisite: CJUS 101, CJUS 103
Study of criminal procedural law. Includes laws of arrest, search and seizure, and admissions and confessions, suspect identification, and rules of evidence. (F, Sp)

CJUS 204 Criminal Investigation
Semester Prerequisite: CJUS 103
Examines the fundamentals of criminal investigation such as crime scene procedures, collection and preservation of physical evidence, interviewing, interrogation, and latent investigation. (F, Sp)

CJUS 205 Policing into the 21st Century
Semester Prerequisite: CJUS 101
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)

CJUS 206 Interview and Interrogation
Semester Prerequisite: None
Provides students with the techniques and procedures utilized in conducting lawful, admissible, and successful investigative interviews and interrogations. (F, Sp, Su)

CJUS 208 Organized Crime Activity
Semester Prerequisite: None
Provides a comprehensive overview of the nature, history, and current status of organized crime. Analyzes the evolution of crime as an economic entity in legitimate, as well as illegitimate, areas of the business world. (F, Sp, Su)

CJUS 215 Psychology of Sex Offenders
Semester Prerequisite: None
Examines the motivation of the sexual offender including background, personality characteristics, and common behaviors. Investigative techniques and procedures are also emphasized. (F, Sp, Su)

CJUS 224 Unarmed Defense
Semester Prerequisite: None
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 hand cuffing. (F, Sp, Su)

CJUS 225 Report Writing in Criminal Justice
Semester Prerequisite: CJUS 101/CJUS 131/CJUS 150/Approval
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)

CJUS 245 Physical Fitness for Criminal Justice
Semester Prerequisite: None
Designed to assist the student in developing and enhancing their level of health and physical fitness so they may successfully complete the certification and re-certification physical fitness criteria established in law enforcement and corrections. The course includes aerobic, strength building, and stretching exercises along with nutrition information. (F, Sp, Su)

CJUS 250 Correctional Institutions
Semester Prerequisite: CJUS 131/Concurrently
Examines the historical development of corrections institutions in the United States. The course 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 251 Correctional Clients
Semester Prerequisite: CJUS 131/Concurrently
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 correctional client and learn intervention strategies. This course is required for the correctional officer vocational certificate. (F, Sp, Su)

CJUS 255 Human Relations in Criminal Justice
Semester Prerequisite: CJUS 131/Concurrently
This course addresses 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 256 Interpersonal Communication in Jails
Semester Prerequisite: CJUS 130, CJUS 255, Approval Required
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 setting up a situation, observing an encounter, and using application skills to control behavior of prisoners. (F, Sp)
CJUS 260 Criminal Investigation and Procedures
Semester Prerequisite: Departmental Approval
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)

CJUS 261 Michigan Criminal Law and Procedure
Semester Prerequisite: Departmental Approval
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, confession/laborde/collaboration, laws of arrest, search and seizure, and suspect identification. (F, Sp, Su)

CJUS 262 Patrol Procedures and Tactics
Semester Prerequisite: Departmental Approval
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. (F, Sp, Su)

CJUS 263 Standard First Aid
Semester Prerequisite: Departmental Approval
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. (F, Sp, Su)

CJUS 264 Report Writing in Law Enforcement
Semester Prerequisite: Departmental Approval
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. (F, Sp, Su)

CJUS 265 Highway Traffic Operations
Semester Prerequisite: Departmental Approval
This course is designed to familiarize the student with the procedures for traffic control and enforcement. Emphasizes state motor vehicle laws and procedures, arrests and citations, OUI/L, and accident investigation. (F, Sp, Su)

CJUS 266 Basic Police Science
Semester Prerequisite: Departmental Approval
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. (F, Sp)

CJUS 267 Law Enforcement Physical Training
Semester Prerequisite: Departmental Approval
Designed to assist law enforcement students in developing and improving their physical fitness. The course includes running, aerobics, calisthenics, and stretching. (F, Sp, Su)

CJUS 268 Precision Driving
Semester Prerequisite: Departmental Approval
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. (F, Sp)

CJUS 281 Directed Independent Study
Semester Prerequisite: Departmental 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 282 Directed Independent Study
Semester Prerequisite: Departmental 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 Field Study
Semester Prerequisite: Departmental Approval
Sixteen eight-hour shifts are scheduled with an approved police department. Written reports are required. (F, Sp, Su)

CJUS 288 Corrections Field Study
Semester Prerequisite: Departmental 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)

CJNP - COMPUTERIZED NUMERICAL CONTROL PROGRAM

CJNP 101 PC Applications for Technology
Semester 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)

CJNP 105 Basic Machining Processes
Semester Prerequisite: MATH 114/TECH 101, CJNP 101/TECH 130
Basic Skills Prerequisite: Reading Level 3; Writing Level 5; Math Level 4
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)

CJNP 110 Foundations of CNC Programming
Semester Prerequisite: CJNP 101/TECH 130, DTS 110, MATH 114/TECH 101, MACH 105
Basic Skills Prerequisite: Reading Level 3; Writing Level 5; Math Level 4
This course lays the foundation for all other Computerized Numerical Control (CNC) courses. Methods of CNC programming including linear, circular and helical interpolation, 3-axis cycles, roughing and pocketing cycles, tool diameter compensation, macros, and subroutines are examined. Students will write programs for 3-axis and 5-axis mills, 3-axis lathe, and 4-axis wire EDM. (F, Sp, Su)

CJNP 130 Machine Controls and Setup
Semester Prerequisite: CJNP 110
Focuses on the setup 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, program loading and editing. (F, Sp)

CJNP 194 Computerized Numerical Control Project Lab
Semester Prerequisite: Departmental Approval
Further skills are pursued involving more advanced concepts of numerical control of machine tools, including the interrelationships of these new manufacturing methods in the various departments of a company. (F, Sp, Su)

CJNP 210 SMART-CAM
Semester Prerequisite: CJNP 110
SMART-CAM is a powerful graphics-based programming software for CNC machine tools. SMART-CAM software is designed to generate CNC programs from mechanical CAD drawings. Students will use SMART-CAM to solve CNC programming problems in both 2-D and 3-D environments and run selected programs on CNC equipment. (F, Sp)

CJNP 215 CAMANO
Semester Prerequisite: CJNP 110
Camano is an advanced 3-D surface design and CNC software. This course will cover surface creation including B-splines and NURBS, primitives such as cones and toroids, and surface filleting. Full 5-axis CNC programs will be created, run, and checked on a coordinate measuring machine. (F, Sp)

COOP - COOPERATIVE EDUCATION

COOP 210 Cooperative Education (Technology)
Semester Prerequisite: Departmental Approval
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 practiced in academic courses to real-world situations. (F, Sp, Su)

LANSING COMMUNITY COLLEGE 1997-98 • 195
CPSC 120 Introduction to Computers
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 4; Writing Level 4; Math Level 4.
In this survey course, the student learns the applications of the computer in society, considering its 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, S, Su)

CPSC 150 FORTRAN
Semester Prerequisite: MATH 122/MATH 126
Basic Skills Prerequisite: Reading Level 5
Structured programming techniques are applied in the design of algorithms and their implementation in FORTRAN. Topics include stepwise refinement, control structures, functions and subroutines, input and output procedures with text files, data types, arrays, and string processing. (F, S, Su)

CPSC 170 Pascal
Semester Prerequisite: MATH 122/MATH 126
Basic Skills Prerequisite: Reading Level 5
Structured programming techniques are applied in the design of algorithms and their implementation in Pascal. Topics include stepwise refinement, control structures, procedures and functions, recursion, input and output operations with text files and binary files, data types, arrays, string processing, and pointer variables. (F, S, Su)

CPSC 230 Algorithms and Computing With C++
Semester Prerequisite: MATH 151
Basic Skills Prerequisite: Reading Level 5
This course is designed to establish an understanding of fundamental computational procedures required for continuing study in computer science. Techniques of structured design are applied in the implementation of algorithms in C++. Topics include program development, control structures, functions, procedures, recursion, file operations, data types, arrays, string processing, pointer variables, and linked lists. (F, S, Su)

CPSC 250 Data Structures
Semester Prerequisite: CPSC 230
Basic Skills Prerequisite: Reading Level 5
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 297 Independent Study in Computer Science
Semester Prerequisite: Departmental Approval
An independent study in some area of computer science not covered by an existing course. The student works independently under the supervision of a faculty member. Student devotes nine or more hours per week to this study in addition to their work with the assigned instructor. (F, S, Su)

CPSC 298 Independent Study in Computer Science
Semester Prerequisite: Departmental Approval
An independent study in some area of computer science not covered by an existing course. The student works independently under the supervision of a faculty member. Student devotes 12 or more hours per week to this study in addition to their work with the assigned instructor. (F, S, Su)

CUMA 102 Credit Union Accounting
Semester Prerequisite: Departmental Approval
This course emphasizes those areas of financial accounting relevant to external reporting by credit unions. (Sp)

CUMA 100 Introduction to Credit Union Operations
Semester 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)

CUMA 200 Credit and Collections
Semester Prerequisite: None
This course covers the basic fundamentals of the credit/collection industry. Emphasis is 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. (Sp)

CUMA 201 Credit Union Financial Counseling
Semester Prerequisite: None
This course is an overview of financial counseling techniques and skills for credit union employees. Emphasis is placed on skill-building exercises to enable students to develop a basic understanding of financial alternatives available to their customers. (Sp)

CUMA 215 Business Law for Credit Unions
Semester Prerequisite: None
Covers fundamental principles of law applicable to credit union personnel. Course will prepare students to perform the legal responsibilities of their jobs more knowledgeably. Course content includes study of contracts, personal and real property, wills, crimes, and the nature and sources of law as related to credit union operations. (F)

CUMA 225 Business Law for Credit Unions
Semester Prerequisite: None
Covers fundamental principles of law applicable to credit union personnel. Course will prepare students to perform the legal responsibilities of their jobs more knowledgeably. Course content includes study of contracts, personal and real property, wills, crimes, and the nature and sources of law as related to credit union operations. (F)

DADH 128 Dental Radiography
Semester Prerequisite: (DAST 111, DAST 112, DAST 114)
Lectures discuss production and emission of dental X-ray, indications for exposure, techniques of exposure, processing, evaluation, and interpretation of dental radiographs. Individualized laboratory sessions provide students practice in exposing, processing, mounting, and evaluating radiographs. (Sp)
DANC 100 Introduction to Dance 2
Semester Prerequisite: None
This course is designed for the student with no dance experience. Students will explore the basic techniques of the core dance forms including ballet, modern, tap, and jazz. Different aspects of dance are covered, including dance as art, the choreographer, the dancer, the viewer, dance production, dance in education, and dance careers. (F)

DANC 101 Beginning Ballet I 2
Semester 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 beginner dance students. Basic barre and center floor combinations will be included. (F, Sp, Su)

DANC 102 Beginning Modern Dance I 2
Semester 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. (F, Sp, Su)

DANC 103 Beginning Jazz I 2
Semester Prerequisite: None
This course is designed for the student with no dance experience. Included are basic alignment, warm-ups, and isolations in jazz dance technique for beginner dance students. Spatial relationships and rhythm are emphasized. (F, Sp)

DANC 104 Beginning Tap I 2
Semester Prerequisite: None
This course is designed for the student with no dance experience. Included are basic alignment, warm-up, and isolation in jazz dance technique for beginner dance students. Spatial relationships and rhythm are emphasized. (F, Sp)

DANC 105 Jazz Beginning I - Summer 1
Semester Prerequisite: None
This course includes basic alignment, warm-up, and isolation in jazz dance technique for beginner dance students. Spatial relationships and rhythm are emphasized. (Su)

DANC 106 Tap Beginning I - Summer 1
Semester Prerequisite: None
This course includes basic tap origins, vocabulary, steps, combinations, and rhythms for the beginner dance student. Basic alignment training techniques, spatial relationships, and elementary combinations are explored. (Su)

DANC 110 High School Dance Workshop 3
Semester Prerequisite: Audition Approval
This course is designed for the talented high school student. It is an intensive course of study in ballet, modern, jazz, and tap. This includes basic alignment training techniques, spatial relationships, and elementary combinations. Some improvisation is used to develop kinesthetic, spatial, cognitive, and physical awareness. Basic performance skills are developed using all dance disciplines. (Su)

DANC 111 Beginning Ballet II 2
Semester Prerequisite: DANC 101
This course is designed for the student who has successfully completed Beginning Ballet I. This course includes a continuation of movement theory, alignment, increases training practices, vocabulary, and longer combinations. The student will begin to explore the aspects of building a personal movement style. (Sp, Su)

DANC 112 Beginning Modern Dance II 2
Semester Prerequisite: DANC 102
This course is designed for the student who has successfully completed Beginning Modern Dance I. 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. (Sp, Su)

DANC 113 Beginning Jazz II 2
Semester Prerequisite: DANC 103
This course includes a continuation of alignment, vocabulary, jazz movement theory, increased training practices, and longer combinations. A more comprehensive use of body isolations and movement rhythms will be explored. The student will begin to explore the aspects of building a personal movement style. (Sp)

DANC 114 Beginning Tap II 2
Semester Prerequisite: DANC 104
This course is 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. (Sp)

DANC 115 Jazz Beginning II - Summer 1
Semester Prerequisite: DANC 105
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)

DANC 116 Tap Beginning II - Summer 1
Semester Prerequisite: DANC 106
Emphasis is placed on increased complexity in rhythms and combinations. Course includes a continuation of tap vocabulary, steps, combinations, and rhythms. (Su)

DANC 123 Choreography 3
Semester Prerequisite: DANC 124
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 124 Dance Improvisation 2
Semester Prerequisite: DANC 101/DANC 102/DANC 103
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 132 Spanish Dance 2
Semester Prerequisite: None
This course is designed for the beginner level student. It is an introduction to the origins and techniques of Spanish dance as performed in Spain. Included are traditional music, folklore, body work, costumes, and customs. (Sp)

DANC 134 African Dance 2
Semester Prerequisite: None
This course is designed for the beginner level student. It is an introduction to the origins and techniques of African dance as performed in various African countries. Included are traditional music, folklore, body work, costumes, and customs. (F, Sp)

DANC 151 Ballet Repertory 1
Semester Prerequisite: Departmental Approval
This course is designed for the student with a background in ballet. It includes a study of the major ballet traditions of the Western world. Course may include choreographic analysis and performance. (Sp)

DANC 152 Modern Dance Repertory 1
Semester Prerequisite: Departmental Approval
This course is designed for the student with a background in modern dance. It includes an exploration of the major traditions of modern dance. Course may include choreographic analysis and performance. (Sp)

DANC 153 Jazz Repertory 1
Semester Prerequisite: Departmental Approval
This course is designed for the student with a background in jazz dance. It includes an exploration of the major traditions of jazz dance. Course may include choreographic analysis and performance. (Sp)
DANC 164 Tap Repertory
Semester Prerequisite: Departmental Approval
This course is designed for the student who has reached a minimum of Beginning Tap II to gain performance experience in a controlled setting. The student participates in the process of auditions, rehearsals, and public performances in the tap genre and concentrates on memorization, projection, and musicality. (F)

DANC 165 Video Dance Repertory
Semester Prerequisite: Departmental 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)

DANC 191 Dance History
Semester Prerequisite: None
This course is a dance history overview commencing with the origins of ballet to the present. Important developments and contributions in the field of American dance education will be interwoven with the important developments and contributors of Western dance forms. (F)

DANC 193 Dance Anatomy
Semester Prerequisite: DANC 101/DANC 102/DANC 103
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 201 Intermediate Ballet I
Semester Prerequisite: Departmental Approval
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)

DANC 202 Intermediate Modern I
Semester Prerequisite: Departmental Approval
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)

DANC 203 Intermediate Jazz
Semester Prerequisite: Departmental Approval
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 Intermediate Tap
Semester Prerequisite: Departmental Approval
This course includes a continuation of tap vocabulary, steps, combinations, and rhythms. Emphasis is placed on increased complexity in rhythms, combinations, and development of a personal movement style in preparation for performance. (F, Sp)

DANC 205 Intermediate Jazz - Summer
Semester Prerequisite: Departmental Approval
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 206 Intermediate Tap - Summer
Semester Prerequisite: Departmental Approval
Emphasis is placed on increased complexity of rhythms and combinations in order to develop a personal style in preparation for performance. (Su)

DANC 211 Intermediate Ballet II
Semester Prerequisite: Departmental 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. Pointe shoes are optional. (F, Sp, Su)

DANC 212 Intermediate Modern II
Semester Prerequisite: Departmental Approval
This course includes a continuation of Intermediate Modern I. Emphasis is placed on center floor transitional techniques, dance dynamics, examination and practice of movement qualities, and continued development of personal movement style. Performance skills are sharpened and include projection, musicality, flow, articulation, clarity of intent, motivation, phrasing, and gesture. (F, Sp, Su)

DANC 225 Advanced Jazz - Summer
Semester Prerequisite: Departmental Approval
Emphasis is placed on learning different styles of jazz dance appropriate to different performance needs. Course includes continuation of alignment, warm-up, and isolations in addition to more complex rhythms and combinations. (Su)

DANC 244 Pointe Technique Beginning
Semester Prerequisite: DANC 111/Higher Level Course
This course is designed for the intermediate level and above ballet student. Pointe technique continues the development of strength, flexibility, coordination, and balance. Emphasis is placed on elementary pointe technique exercises to strengthen ankles, calves, legs, and lower back for pointe work. (F, Su)

DANC 282 Dance Teaching Assistantship
Semester Prerequisite: Departmental Approval
This course is designed for the beginning teacher. Under the guidance of a faculty member in the student's primary discipline, the student will learn to implement the use of goals, objectives, and strategies in class preparation by co-teaching a beginning level course. (F, Sp)

DANC 283 Dance Teaching Practicum
Semester Prerequisite: Departmental Approval
This course is designed to enable the student to teach a dance course at the beginning level in the student's primary discipline under the guidance of an instructor. Implementation of objectives and strategies will enable the student to prepare a fully articulated course. (Sp)

DANC 295 Directed Studies I
Semester Prerequisite: Departmental Approval
Working under the guidance of an approved instructor, the student will pursue studies not otherwise available through scheduled course offerings. (F, Su)

DANC 296 Directed Studies II
Semester Prerequisite: Departmental Approval
Working under the guidance of an approved instructor, the student will pursue studies not otherwise available through scheduled course offerings. (F, Su)

DANC 297 Directed Studies III
Semester Prerequisite: Departmental Approval
Working under the guidance of an approved instructor, the student will pursue studies not otherwise available through scheduled course offerings. (Sp)

DAST - DENTAL ASSISTING

DAST 110 Dental Instruments
Semester Prerequisite: Admission to Program
Lecture and practical experience will introduce the student to dental instruments and equipment for tray setups and the use and maintenance of these items for dental procedures. (F)

DAST 111 Preclinical Dental Assisting - DA
Semester Prerequisite: DAST 110, DAST 114
Through lecture and simulated clinical experience the student will be introduced to these dental procedures: four-handed chairside assisting, charting, management of clinical records, and taking and recording vital signs. (F)
DAST 112 Dental Anatomy
Semester Prerequisite: Admission to Program
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 included with a review of basic oral pathology for the dental assistant. Laboratory activities develop observation and dexterity skills while studying this information. (F)

DAST 114 Preventive Dentistry and Procedures
Semester Prerequisite: Admission to Program
An introduction to the dental operative, aseptic techniques, and oral hygiene procedures for preventing dental diseases. Dental emergency prevention, protocol, care, and OSHA regulations are reviewed. (F)

DAST 116 Dental Materials
Semester Prerequisite: Admission to Program
Lecture and laboratory sessions address the properties, selection, manipulation, and evaluation of materials used in dentistry. Practice is provided in the preparation, manipulation, and delivery of the materials most often handled by the dental assistant. (F)

DAST 118 Dental Assisting Principles
Semester Prerequisite: Admission to Program
Various aspects of the dental profession are discussed to prepare the student dental assistant for entry to the health team. Subjects include dental law, ethics, liability, health profession organizations, employment, and current health care issues. (F)

DAST 120 Clinical Dental Assisting I
Semester Prerequisite: DAST 111, DAST 112, DAST 116, DAST 118, EMSB 102
A study of the clinical practice of four-handed chairside dental assisting with emphasis on general restorative and dental specialty procedures. Sessions correlate clinical procedures and practice with private practice and field experience participation. (Sp)

DAST 126 Registered Dental Assistant Procedures for Dental Assistants
Semester Prerequisite: DAST 110, DAST 111, DAST 112, DAST 114, DAST 116
A study of the intra-oral functions delegated to the licensed registered dental assistant in the state of Michigan. Laboratory time is provided for the student to learn the technique and gain proficiency in those procedures that will be performed during clinic rotations. (Sp)

DAST 130 Clinical Dental Assisting II
Semester Prerequisite: DAST 120, DAST 120, DADD 128
Lecture sessions teach basic communication, psychology, and effective dental office management skills for dental assistants. Students practice these skills during laboratory simulations. Field experience assignments provide on-site practice and integration of dental assisting, chairside, specialty, RDA, and team skills. (Sp)

DAST 140 Clinical Dental Assisting III
Semester Prerequisite: DAST 130
Basic communication, writing, and psychological skills needed for effective patient management, dental office management, chairside assisting, and the employment process are emphasized. Computer application and field experience assignments provide preparation, practice, and integration of these skills to the dental office setting. (Sc)

DHYN - DENTAL HYGIENE

DHYN 110 Preclinical Dental Hygiene
Semester Prerequisite: Admission to Program
Through lecture and simulated clinical experience the student is introduced to the clinical practice of dental hygiene, operational procedure, oral exams and assessments, oral prophylaxis, oral health practices and patient education, and orientation to the profession. Students will also learn success maintenance of their own oral health. (F)

DHYN 112 Oral Anatomy
Semester Prerequisite: Admission to Program
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)

DHYN 114 Oral Pathology
Semester Prerequisite: Admission to Program
Study of the diseases affecting 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)

DHYN 116 Dental Pharmacology
Semester Prerequisite: Admission to Program
A study of the administration, use, action, and affects of drugs most commonly used by patients and their relationship to dental treatment and dental hygiene procedures. (F)

DHYN 120 Clinical Dental Hygiene I
Semester Prerequisite: DHYN 110, DHYN 112, DHYN 114, DHYN 116, EMSB 102
Initial clinical practice of basic dental hygiene services: recognition and recording of 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)

DHYN 122 Principles of Periodontics
Semester Prerequisite: DHYN 110, DHYN 112, DHYN 114, DHYN 116
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)

DHYN 124 Nutrition and Oral Health
Semester Prerequisite: DHYN 110, DHYN 112, DHYN 114, DHYN 116, EMSB 102
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 126 Dental Materials and Methods
Semester Prerequisite: DHYN 110, DHYN 112, DHYN 114, DHYN 116
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)

DHYN 210 Clinical Dental Hygiene II
Semester Prerequisite: DAST 128, DHYN 120, DHYN 122, DHYN 124, DHYN 126
A continuation of clinical practice, completing 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 212 Advanced Dental Hygiene Procedures
Semester Prerequisite: DAST 128, DHYN 120, DHYN 122, DHYN 124, DHYN 126
The study of advanced clinical dental hygiene procedures with emphasis on the hygienist's role as co-therapist in performing root planing, ultrasonic instrumentation, nutritional counseling, and applying chemotherapeutic agents. Students complete a periodontal case study to demonstrate appropriate implementation of their periodontal knowledge and therapy skills. (F)

DHYN 214 Clinical Oral Pathology
Semester Prerequisite: DHYN 126, DHYN 120, DHYN 122
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 216 Dental Public Health and Education
Semester Prerequisite: DAST 128, DHYN 120, DHYN 122, DHYN 124, DHYN 126
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 220 Clinical Dental Hygiene III
Semester Prerequisite: DHYN 210, DHYN 212, DHYN 214, DHYN 216
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 practices. Employment preparation and legal and professional ethics issues are reviewed. (Sp)

DHYN 222 Community Oral Health
Semester Prerequisite: DHYN 210, DHYN 212, DHYN 214, DHYN 216
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 specially care used needed by patients is presented. Each student participates in a variety of community health projects and observing in dental specialty practices. (Sp)

DHYN 224 Testing Styles and Inventory
Semester Prerequisite: DHYN 210, DHYN 212, DHYN 214, DHYN 216
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)

DHYN 230 Registered Dental Assistant Procedures for Dental Hygienist
Semester Prerequisite: DAAD 128, DHYN 210, DHYN 212
A specially designed course for dental hygiene students wishing to learn auxiliary procedures and those intradental 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)

DTDS 100 Basic Drafting
Semester Prerequisite: None
This course focuses on basic concepts in orthographic projection, including sketching of both orthograhics and pictorials. Lettering techniques are stressed with a brief introduction to dimensioning techniques. Students will complete a set of drawings to demonstrate understanding of the concepts presented. (F, Sp, Su)

DTDS 101 Drafting I
Semester Prerequisite: DTDS 100/Placement
Basic Skills Prerequisite: Reading Level 4; Writing Level 3; Math Level 4
This is an introductory course in drafting concepts. Instruction includes orthographic projection, auxiliary views, sections, dimensioning techniques, and secondary auxiliary view projections. Students will complete a series of drawings to demonstrate understanding of the concepts presented. (F, Sp, Su)

DTDS 102 Drafting II
Semester Prerequisite: DTDS 101
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 aerospace industries. (F, Sp, Su)

DTDS 103 Geometric Tolerancing
Semester Prerequisite: DTDS 101/Concurrently
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)

DTDS 104 Descriptive Geometry
Semester Prerequisite: DTDS 102
This course covers the solution of space problems through the practice of advanced orthographic projection. Content includes lines and planes, parallelism, perpendicularity, developments, and intersections. Students will complete projects relating to architectural, civil, and industrial engineering situations. (F, Sp)

DTDS 110 Industrial Blueprint Reading
Semester Prerequisite: DTDS 100
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, Su)

DTDS 131 AutoCAD Basic 2-D
Semester Prerequisite: CNCP 101/TECH 130/Concurrently, DTDS 101
This course gives an introduction to AutoCAD software. Creation of 2-D multiple 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)

DTDS 132 AutoCAD Advanced 3-D
Semester Prerequisite: DTDS 131
This course builds on DTDS 131. In addition to learning how to use attributes, more complex drawings will be assigned. Students will also learn to write macros to customize AutoCAD to the user's needs and learn how to use 3-D drawing features to complete product design drawings. (F, Sp, Su)

DTDS 160 Unigraphics I
Semester Prerequisite: DTDS 101
This is the first of a three-semester course sequence that covers the fundamentals of the Unigraphics System of interactive design. This course covers the comprehensive CAD concepts of 2-D and 3-D construction and basic solids modeling, as well as some of the concepts of drafting. (F, Sp, Su)

DTDS 181 Unigraphics II
Semester Prerequisite: DTDS 180, DTDS 102/Concurrently
This is the second course of a three-semester course sequence. The course covers the construction of solid parts with assemblies and components constructed using primitives, extrusions, and bodies of revolution as well as surfaces. The solid models constructed will be dimensioned and plotted as drawings in class. (F, Sp, Su)

DTDS 182 Unigraphics III
Semester Prerequisite: DTDS 102, DTDS 103, DTDS 181
This is the third of a three-semester course sequence that covers the design and construction of sophisticated solid models of complex assemblies and components, and the production of dimensioned and tolerated engineering drawings of those components. Advanced concepts of Unigraphics modeling will be discussed and utilized in class projects. (F, Sp, Su)

DTDS 202 Die Design and Construction
Semester Prerequisite: DTDS 101
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)

DTDS 204 Jig and Fixture Design
Semester Prerequisite: DTDS 101
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)

DTDS 209 Industrial Drafting Lab
Semester Prerequisite: Instructor Approval
This additional lab time to industrial drafting students to fulfill extra requirements. This lab must be taken in conjunction with a drafting class. (F, Sp, Su)

DTDS 233 AutoCAD Solids
Semester Prerequisite: DTDS 101
Students will learn how to use the solid modeling features of AutoCAD. Product design drawings will be used to develop skills. Students will learn how to construct a solid model library of parts. (F, Sp, Su)

DTDS 280 Drafting Project Lab
Semester Prerequisite: Approval Required
This course is intended to give the advanced drafting and design student an opportunity for more experience through mutual agreement between student and instructor. Students will complete advanced projects and research in a variety of design application situations. (F, Sp, Su)
DTDS 285  CAD Project Lab
Semester Prerequisite: Approval Required
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, Su)

ECON 120  Power, Authority, and Exchange
Semester Prerequisite: None
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, Su)

ECON 140  Current Economic Issues
Semester Prerequisite: None
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, Sp, Su)

ECON 201  Principles of Economics - Micro
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 4; Writing Level 3; 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 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
Semester Prerequisite: ECON 201/Departmental Approval
Basic Skills Prerequisite: 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  Economic/Business History of the U.S.
Semester Prerequisite: None
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, Su)

ECON 221  International Economics
Semester Prerequisite: ECON 202/Instructor Approval
This course examines, from both historical and theoretical perspectives, the benefits of international trade; tariffs, quotas, and other restrictions on international trade; free trade areas and common markets; international capital movements, the balance of payments, alternative exchange rate systems, and exchange rate determination. (Sp)

EDUC 300  Education Practicum 1
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 4; Writing Level 3
Beginning practical experience and training in the field for individual students. The student is placed with an educational institution. (F, Sp, Su)

EDUC 220  Introduction to Education
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 4; Writing Level 3
An introduction to education as a teaching profession including an overview of the transactions, philosophy, history, current issues and trends, and organization of education as a human endeavor. Also included are the use of audiovisual materials, school records, safety, discipline, dramatic play, and storytelling. (F, Sp, Su)

EDCT 101  Schematic Drawing
Semester 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. The students will etch and drill a printed circuit board of a circuit that will be assembled during the soldering class. (F, Sp, Su)

EDCT 101  Analog Problems
Semester Prerequisite: High School Algebra
Basic Skills Prerequisite: Reading Level 6; Writing Level 3; Math Level 4
This course provides circuit analysis problem practice for both DC and AC circuits. Topics include algebraic manipulation and solution of electronic formulas and the basic trigonometric solutions of AC circuits using complex notation. A scientific calculator is required for polar to rectangular conversion and binary, octal, and hexadecimal calculations. (F, Sp)

EDCT 105  Solar Electrical Systems
Semester Prerequisite: None
Introduction to producing and storing electricity generated by sunlight. Topics include photovoltaics, batteries, charge controllers, inverters, efficient electrical appliances, and system installations. (Su)

EDCT 109  DC Circuits
Semester Prerequisite: EDCT 101/Concurrently
A beginning DC circuit analysis course that uses resistors, power supplies, and digital multimeters. Lecture and laboratory topics include resistor color code, series, parallel, series-parallel circuits, Kirchhoff's voltage law, superposition, and Thévenin's theorems. (F, Sp, Su)

EDCT 110  AC Circuits
Semester Prerequisite: EDCT 101; EDCT 109; Concurrently
An AC circuit analysis course using complex numbers and trigonometry to analyze series and parallel RCL circuits. RC filter networks and series and parallel resonant circuits are also covered. AC generators, oscilloscopes, and frequency counters are used in laboratory experiments. (F, Sp, Su)

EDCT 112  Transistors
Semester Prerequisite: EDCT 110/EDCT 111; EDCT 101/Approval
A lecture and laboratory course dealing with diodes in power supply and regulator circuits, bipolar and field effect transistor biasing, and single and multistage amplifier circuits. Circuits are covered from the analysis, design, and troubleshooting standpoint. (F, Sp)

EDCT 120  Programming Preparation
Semester Prerequisite: None
The student will learn software that provides preparation for machine or high-level language programming. Software used is DOS, 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)

EDCT 121  BASIC for Electronics
Semester Prerequisite: EDCT 110/EDCT 111; EDCT 120
The student will write and execute programs in the BASIC language for electronic circuit analysis. Program problems will range from simple series circuits to transistor amplifiers. A student-designed programming project is used as part of the lab evaluation. (F, Sp, Su)

EDCT 130  Machine Language Programming
Semester Prerequisite: EDCT 110/EDCT 111; EDCT 120
Covers the fundamentals of machine language programming for the MCS80MPU: computer math, instruction set, addressing modes, branching, stack operations, subroutines, interrupts, and programming of PIA. Laboratory work includes writing programs in machine language. (F, Sp, Su)

EDCT 131  Digital Basics
Semester Prerequisite: EDCT 110/EDCT 111
Introduces digital electronics: basic gates, combinational logic, K-maps and functions of combinational logic such as decoders and code converters. It also introduces sequential logic: latches, flip-flops, timers, counters, and shift registers. Laboratory work includes the analysis, construction, and troubleshooting of small digital circuits and circuits constructed for EDCT 231 using TTL ICs. (F, Sp, Su)

LANSING COMMUNITY COLLEGE 1997-98 ■ 201
ELCT 151  Computer Troubleshooting I  3  Semester Prerequisite: ELCT 171/Concurrently
This is a troubleshooting and repair course intended for students in the Computer Repair Certificate Program. Course topics include basic troubleshooting techniques, unit and board swap computer troubleshooting, disk drive maintenance, and computer preventive maintenance. (Sp)

ELCT 160  Logic Problems Analysis I  3  Semester Prerequisite: None
A fundamental analysis course intended for students in the computer repair certificate program. Course topics include manipulation of formulas used in electronics, basic gate operation and truth tables, Boolean algebra, binary, octal, and hexadecimal base number systems. (F)

ELCT 161  Soldering/Desoldering  1  Semester Prerequisite: None
A basic soldering course. Course topics include soldering electronic components to printed circuit boards, cable construction, and surface mount soldering. Desoldering components using solder wick, vacuum desoldering tools and equipment, and printed circuit board repair. (F, Sp, Su)

ELCT 170  Computer Repair Electronics I  6  Semester Prerequisite: ELCT 180/Concurrently/Approval
A basic electronics course intended for students in the computer repair program. This course begins with basic electricity concepts and continues with topics through transistor circuits and basic digital electronics. (F)

ELCT 171  Computer Repair Electronics II  6  Semester Prerequisite: ELCT 170
A digital electronics and computer systems course intended for students in the Computer Repair Certificate Program. Course topics include semiconductor and magnetic memory, computer system memory, microprocessors, peripheral adapters, and microcomputer systems. (Sp)

ELCT 180  Computer Test Equipment I  3  Semester Prerequisite: ELCT 170/Concurrently/Approval
A basic test equipment course intended for students in the Computer Repair Certificate 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  Semester Prerequisite: ELCT 180, ELCT 171/Concurrently
An advanced test equipment course intended for students in the Computer Repair Certificate Program. Course topics include software diagnostic routines, signature and data analysis, and computer troubleshooting equipment. (Sp)

ELCT 206  Project Lab  1  Semester Prerequisite: ELCT 112, 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 that has the prior approval of a faculty member. (F, Sp, Su)

ELCT 207  Project Lab  2  Semester Prerequisite: ELCT 112, 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 that has the prior approval of a faculty member. (F, Sp, Su)

ELCT 211  Linear Circuits I  4  Semester Prerequisite: ELCT 112
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  4  Semester Prerequisite: ELCT 211
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 230  Advanced Microprocessor  5  Semester Prerequisite: ELCT 112, ELCT 121, ELCT 130
Covers advanced topics in microprocessor: 8088/8086 instruction set, addressing modes, interrupt structure, memory map of PC under DOS, BIOS, MSDOS functions, parallel I/O, keyboard, mouse, and monitor driver routines. Lab work involves writing external resident, and interactive programs under DOS and interfacing to 8255, 8251, and A/D converters. (F)

ELCT 231  Advanced Digital Electronics  5  Semester Prerequisite: ELCT 112, ELCT 121, ELCT 131
Covers advanced topics in digital electronics: adders, comparators, code converters, ALUs, nonsequential and shift register counters, display systems, and solid-state memories. It also covers S/P, P/B, SIGNATURE, and D/A and A/D circuits. Laboratory work includes the analysis, design, construction, and troubleshooting of digital circuits using SSI, MSI, and LSIs. (F)

ELCT 232  Digital Project  3  Semester Prerequisite: ELCT 130, ELCT 231
This course deals with the design of a microcomputer-based programmable monitoring and control system designed around the MC68HC11 and the use of an emulator to verify the design. Laboratory work includes a microcomputer-based design project, preferably using the MC68HC11 with a keyboard, LED/LCD display, and sensors. (Sp)

ELCT 241  Analog Troubleshooting  1  Semester Prerequisite: ELCT 112
Basic troubleshooting principles will be applied to diode, bipolar, and field effect transistor circuits. Laboratory work will be based on computer-simulated troubleshooting exercises. (F)

ELCT 242  Computer Interfacing and Peripherals  5  Semester Prerequisite: ELCT 230, ELCT 231
Covers 8086/8088 pins functions, address decoding, interfacing of static memory, dynamic memory, and IO adapters. Principle of operation and interfacing of keyboard, display, printer, floppy disk, modem, LAN, and motor control hardware. Lab work involves constructing hardware and writing software for most of the peripherals discussed in the course. (Sp)

ELCT 251  Digital Troubleshooting I  1  Semester Prerequisite: ELCT 112, ELCT 131
This is a half-semester lab course designed to give the student hands-on experience in troubleshooting digital circuits involving combinational logic, multiplexers, decoders, display and display drivers, flip-flops, counters, timing circuits, shift registers, and other digital circuitry. Class demonstrations and videotapes are used for instruction. (F)

ELCT 252  Digital Troubleshooting II  3  Semester Prerequisite: ELCT 230, ELCT 231, ELCT 251
This course is a systematic approach to troubleshooting microprocessor based systems and using test equipment. The student gains hands-on experience by drawing timing diagrams, troubleshooting flowcharts, writing or using diagnostic programs, and using test equipment to locate faults on MPU, memory, video, I/O, and floppy disk controllers boards. (Sp)

ELCT 261  Consumer Product Systems  3  Semester Prerequisite: ELCT 112
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 videocassette recorders. Lab work will involve measurements and alignments of normally operating systems. (Sp)

ELCT 271  Communications I  4  Semester Prerequisite: ELCT 112/Approval
This course covers 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  Semester Prerequisite: ELCT 271/Approval
The student will learn frequency modulation transmitting and receiving circuits and systems, transmission lines, antennas, and microwave devices. (Sp)
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Semester Prerequisite</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELCT 281</td>
<td>Biomedical Instrumentation</td>
<td>ELCT 112</td>
<td>Preparation for the certified biomedical electronics technician examination begins here. The student will be introduced to biomedical safety standards and regulatory agencies as well as measurement of physiological signals with biomedical equipment. Lab exercises include safety testing and performance testing of biomedical equipment. (F)</td>
</tr>
<tr>
<td>ELCT 290</td>
<td>Biomedical Internship</td>
<td>ELCT 281/Approval</td>
<td>This course will allow students to be placed in hospital biomed 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)</td>
</tr>
<tr>
<td>ELTE 100</td>
<td>Electrical Safety Practices</td>
<td>None</td>
<td>This course covers basic electrical safety practices in the home, in the 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)</td>
</tr>
<tr>
<td>ELTE 110</td>
<td>Practical Electricity</td>
<td>ELTE 100 Concurrently</td>
<td>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. Reviewed electrical codes and standards. (F, Sp, Su)</td>
</tr>
<tr>
<td>ELTE 112</td>
<td>Basic Wiring Installation</td>
<td>ELTE 110</td>
<td>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)</td>
</tr>
<tr>
<td>ELTE 121</td>
<td>Analyzing Electric Circuits</td>
<td>MATH 050, ELTE 110/Approval</td>
<td>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)</td>
</tr>
<tr>
<td>ELTE 122</td>
<td>Industrial Control Electronics</td>
<td>ELTE 110, ELTE 121, INAU 100/Approval</td>
<td>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)</td>
</tr>
<tr>
<td>ELTE 123</td>
<td>Motors and Transformers</td>
<td>ELTE 121</td>
<td>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)</td>
</tr>
<tr>
<td>ELTE 131</td>
<td>Introduction to Machine Control</td>
<td>ELTE 110</td>
<td>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)</td>
</tr>
<tr>
<td>ELTE 141</td>
<td>National Electrical Code I</td>
<td>ELTE 110/Equivalent</td>
<td>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, learn how to locate often used code sections: Ohm's law, voltage drop, wire and conduit sizing, and installation methods. (F, Sp)</td>
</tr>
<tr>
<td>ELTE 142</td>
<td>National Electrical Code II</td>
<td>ELTE 141/ELTE 145/Approval</td>
<td>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)</td>
</tr>
<tr>
<td>ELTE 143</td>
<td>National Electrical Code III</td>
<td>ELTE 142/Departmental Approval</td>
<td>For individuals with a journey 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)</td>
</tr>
<tr>
<td>ELTE 145</td>
<td>Electrical Prints for Buildings</td>
<td>ELTE 110/Approval</td>
<td>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)</td>
</tr>
<tr>
<td>ELTE 147</td>
<td>National Electric Code Changes</td>
<td>ELTE 141/Equivalent</td>
<td>Covers the changes to the National Electric Code and state codes in the most recent code cycle. (F, Sp, Su)</td>
</tr>
<tr>
<td>ELTE 150</td>
<td>Electric Motor Maintenance</td>
<td>ELTE 110</td>
<td>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 motor working procedures is also included. (Sp)</td>
</tr>
<tr>
<td>ELTE 232</td>
<td>Industrial Control Design</td>
<td>ELTE 131</td>
<td>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. (F)</td>
</tr>
<tr>
<td>ELTE 240</td>
<td>Electrical Estimating</td>
<td>ELTE 110, ELTE 145/Approval</td>
<td>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, estimation techniques and specifications. Students should have wiring experience, practice in the use of NEC rules, and electrical prints before enrolling. (F)</td>
</tr>
<tr>
<td>ELTE 260</td>
<td>Introduction to Programmable Logic Controllers</td>
<td>ELTE 121</td>
<td>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, counters), and connecting external devices to Allen Bradley, Modicon, and Omron. (F, Sp)</td>
</tr>
<tr>
<td>ELTE 261</td>
<td>Allen-Bradley PLC-5 Advanced</td>
<td>ELTE 260</td>
<td>This course covers programming and connections for Allen-Bradley PLC-5 controllers. Focus on math, subroutines, file, block transfer, sequences, 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)</td>
</tr>
<tr>
<td>EMSA 100</td>
<td>First Aid and CPR</td>
<td>None</td>
<td>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)</td>
</tr>
</tbody>
</table>
EMSA 110 EMT Refresher
Semester Prerequisite: Basic EMT
This course will provide the EMT with the opportunity to meet State of Michigan refresher requirements. Content includes CPR, oxygen therapy, airway management, patient assessment, medical and environmental emergencies, backboarding, splinting, backboarding, oxygen delivery equipment, CPR, and airway management in the delivery of basic emergency care. (F, Sp, Su)

EMSA 221 CISD-Critical Incident Stress Debriefing
Semester Prerequisite: EMS Personnel
This seminar provides the knowledge and skills required to function as a member of a CISD team which assist peers in preventing, recognizing, mitigating, and recovering from stressfull emergencies. It is required for emergency related personnel, mental health workers, and clergy interested in becoming a team member. (F, Sp, Su)

EMSA 223 Pre-Hospital Care of the Injured Child
Semester Prerequisite: EMS Personnel
A course based on the educational program developed by the Children's Hospital National Medical Center, Washington, D.C. The course focuses on the pre-hospital management of the acutely ill or injured child or infant. Advance study is required for successful completion of this course. (F, Sp, Su)

EMSA 224 BLS-Base Trauma Life Support
Semester Prerequisite: EMS Personnel
A course which provides instruction and intensive evaluation of current theory and skills used in the pre-hospital management of the trauma victim. Advance study is required for successful completion of this course. Follows national BLS curriculum. (F, Sp, Su)

EMSA 225 Paramedic Continuing Education
Semester Prerequisite: EMS Personnel
This course is a series of continuing education topics designed to meet all of the CE points required by the State of Michigan for relicensure of a paramedic. Basic EMTs and EMT specialist may attend designated sessions. (Sp)

EMSB - EMERGENCY MEDICAL SERVICES SEMINARS

EMSB 101 CPR for Bystanders/HeartSaver
Semester Prerequisite: None
This seminar is designed for CPR instruction of the general public and adheres to American Heart Association guidelines. Content includes adult one-person CPR and foreign body airway obstruction. Also includes information about heart disease, risk factors, patient heart timing, and heart and lung physiology. (F, Sp, Su)

EMSB 102 CPR for Health Care Professionals
Semester Prerequisite: Health Professional
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, and 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
Semester Prerequisite: Current Provider "C" Card
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
Semester Prerequisite: Basic Cardiac Life Support. Current Provider "C" Card
The CPR Instructor's seminar is to provide the opportunity and forum to acquire knowledge and skills to accurately instruct and test Basic Cardiac Life Support Provider's courses according to American Heart Association guidelines. (F, Sp, Su)

EMSB 106 Infant/Child CPR
Semester 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 110 First Aid and CPR Seminar
Semester 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)

EMSB 121 EMS Continuing Education A
Semester Prerequisite: EMS Personnel
A series of continuing education seminars for the basic EMT, EMT specialist or paramedic designed to meet three or four continuing education credits for relicensure requirements of the State of Michigan. Students may elect to take as many seminars as needed to fulfill relicensure requirements. (F, Sp, Su)

EMTA - EMERGENCY MEDICAL TECHNOLOGY

EMTA 100 Medical First Responder
Semester Prerequisite: None
A course to 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 102 Basic EMT I
Semester Prerequisite: EMTA 101 Concurrently
Basic Skills Prerequisites: Floating Level 4 (Enrolling Level 4)
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 103 Basic EMT II
Semester Prerequisite: EMTA 101, EMTA 102
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
Semester Prerequisite: EMTA 103 Concurrently
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 and the clinical component enables the student to apply for licensing as a basic EMT. (Sp, Su)

EMTA 105 Ambulance Driving
Semester Prerequisite: EMT/EMT Student
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)

EMTA 108 Legal Issues in Emergency Medical Services
Semester Prerequisite: EMT/EMT Student
A course to assist the EMT in understanding the legal system and legal principles as it applies 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
Semester Prerequisite: EMTA 103, EMTA 104 Concurrently
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 community service component: teaching accident/sudden illness prevention and immediate first aid treatment to community. (Sp, Su)

EMTA 114 Rescue, Extrication, and Dangerous Situations
Semester Prerequisite: EMT/EMT Student
A course to provide EMS or rescue personnel with skills in light and heavy vehilce extrication, industrial rescue techniques, extraction from farm machinery, and other specialized rescue techniques. Emphasis is placed on patient and rescuer safety. (F, Sp)
EMTA 200 EMT Specialist

Semester Prerequisite: Basic EMT
A course to provide the basic EMT with knowledge and skills necessary for licensure as an EMT specialist. Emphasis is placed on intravenous therapy, advanced airway skills, and patient assessment skills. Successful completion requires passing written and practical exams and the supervised clinical component. (F, Sp)

EMTA 222 EMS Instructor Coordinator

Semester Prerequisite: Three Years EMS Experience
A Michigan Department of Public Health approved course for EMS personnel interested in becoming an instructor coordinator. Includes teaching and testing methods, lesson plan development, writing performance objectives, course administration, MDPH application for course approval, and meeting state requirements. Student teaching required. (F)

EMTA 223 Advanced EMS I: Critical Care EMS

Semester Prerequisite: Departmental Approval
Prepares the student to become a critical care transport specialist and perform new expanded scope of practice skills. Topics include ventilators, 12-lead ECGs, IV pumps, pharmacology, invasive lines, and complications of transport. Successful completion requires passing written and practical exams plus the supervised clinical component. (F)

EMTA 224 Advanced EMS II: Hospital Paramedic

Semester Prerequisite: Departmental Approval
This course will prepare the paramedic to work in a hospital or walk-in clinic environment. Hospital procedures, pharmacology, documentation, and assessment will be covered. Successful completion requires passing written and practical exams plus the supervised clinical component. (Su)

EMTA 225 Medical Hazardous Material

Semester Prerequisite: Departmental Approval
An advanced course in EMS designed to provide the skills and understanding necessary for paramedics to safely manage Haz-Mat exposed patients. Key topics include safety, scene operations, hazard identification, patient assessment, treatment such as specialized pharmacology, and transport. (Sp)

EMTA 226 Emergency Medical Services Management

Semester Prerequisite: EMS Personnel
This course is designed to provide the student with knowledge and understanding of current EMS management issues. The course will explore the EMS specific aspects of human resources, administration, operations, finance, clinical management, medical control authority, system design, and public relations. (F)

ENGL - ENGLISH

ENGL 122 Writing about Literature and Ideas

Semester Prerequisite: 2.0 Minimum in WRIT 121
Basic Skills Prerequisite: Reading Level 5; 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 about Literature and Ideas

Semester Prerequisite: Departmental Approval
Basic Skills Prerequisite: Reading Level 5; Writing Level 6
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

Semester Prerequisite: WRIT 121 (ENGL 122 Recommended)
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. (Su)

ENGL 202 Introduction to Drama

Semester Prerequisite: WRIT 121 (ENGL 122 Recommended)
Basic Skills Prerequisite: Reading Level 5; Writing Level 6
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

Semester Prerequisite: WRIT 121 (ENGL 122 Recommended)
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. (Sp)

ENGL 211 World Literature I

Semester Prerequisite: 2.0 Minimum in WRIT 121
Basic Skills Prerequisite: Reading Level 5; 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

Semester Prerequisite: 2.0 Minimum in WRIT 121
Basic Skills Prerequisite: Reading Level 5; 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

Semester Prerequisite: WRIT 121 (ENGL 122 Recommended)
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

Semester Prerequisite: WRIT 121 (ENGL 122 Recommended)
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 filmmaker's visual and aural techniques as well as conventions more commonly associated with literature. (F, Sp, Su)

ENGL 245 Popular Culture and Mass Media

Semester Prerequisite: WRIT 121 (ENGL 122 Recommended)
A study of the popular culture distributed by mass media (newspapers, radio, film, television, magazines, and music video) and how the media and popular culture reflect and shape our cultural beliefs. Extensive use of multimedia. (F)

ENGL 255 American Literature I

Semester Prerequisite: WRIT 121 (ENGL 122 Recommended)
Provides a perspective on the further development of traditional American literature from 1865 (the Reconstruction period) to contemporary literature. Features selected essays, autobiographical writings, poems, fiction, and drama from the mid-19th century to 1865, including the work of women and ethnic minorities, which have contributed to American thought. (F, Sp)

ENGL 256 American Literature II

Semester Prerequisite: ENGL 255
Provides a perspective on the further development of traditional American literature from 1865 (the Reconstruction 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 20th century, including the work of women and ethnic minorities, which have profoundly shaped American literature. (F, Sp)

ENGL 260 African-American Literature

Semester Prerequisite: WRIT 121 (ENGL 122 Recommended)
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
Semester Prerequisite: WRIT 121 (ENGL 122 Recommended)
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 265 British Literature I
Semester Prerequisite: WRIT 121 (ENGL 122 Recommended)
British Literature I surveys the poetry, prose, and drama of the major British writers from Chaucer (14th Century) to the Victorians (19th Century). The work is 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
Semester Prerequisite: WRIT 121 (ENGL 122 Recommended)
British Literature II surveys the poetry, prose, and drama of the major British writers from the Romantics (19th Century) to the 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
Semester Prerequisite: WRIT 121 (ENGL 122 Recommended)
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. (Su)

ENGL 290 Shakespeare
Semester Prerequisite: WRIT 121 (ENGL 122 Recommended)
Introductory course in the dramatic works of William Shakespeare. Students will read nine to 12 plays representative of the author’s comedies, histories, and tragedies. (F)

ENGL 295 Independent Study
Semester Prerequisite: Departmental Approval
Special research projects and/or individual readings in English. Students will invest no less than 32 hours for each credit earned. Enrollment is usually restricted to honors students who have grade point averages of at least 3.0 in courses offered by this department. (F, Sp, Su)

ENGL 296 Independent Study
Semester Prerequisite: Departmental Approval
Special research projects and/or individual readings in English. Students will invest no less than 32 hours for each credit earned. Enrollment is usually restricted to honors students who have grade point averages of at least 3.0 in courses offered by this department. (F, Sp, Su)

ENRI - ENRICHMENT

ENRI 005 Academic Preparation Laboratory
Semester Prerequisite: None
Arranges the days and times when students will attend enrichment lab. Students must register for both an enrichment lab course, such as ENRI 109, and a section of ENRI 005. (F, Sp)

ENRI 098 Success Workshop
Semester Prerequisite: None
Mini-workshop intended to introduce and/or review reading-related techniques essential for academic survival and success. Sessions cover time management, effective use of reference sources, and public speaking. (F, Sp)

ENRI 101 Individualized English I
Semester Prerequisite: Departmental Approval
Individualized instruction in one of several language areas: writing, editing, vocabulary development, including pronunciation; and reading. Editing instruction may include spelling, standard English grammar, organizational strategies, or punctuation. Students and instructors select instructional materials and design an individualized study program. (May repeat for credit three times.) (F, Su)

ENRI 102 Individualized English II
Semester Prerequisite: Departmental Approval
Individualized instruction in one of several language areas: writing, editing, vocabulary, pronunciation, and reading. Editing instruction may include spelling, standard English grammar, organizational strategies, or punctuation. Students and instructors select instructional materials and design an individualized study program. (F, Sp)

ENRI 103 Individualized English III
Semester Prerequisite: Departmental Approval
Individualized instruction in one of several language areas: writing, editing, vocabulary development, including pronunciation, and reading. Editing instruction may include spelling, standard English grammar, organizational strategies, or punctuation. Students and instructors select instructional materials and design an individualized study program. (May repeat for credit three times.) (F, Sp)

ENRI 105 Life Learning Portfolio
Semester Prerequisite: Departmental Approval
This course provides the opportunity for students to create a portfolio that will document learning acquired through work, volunteer, and/or life 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)

ENRI 109 Academic Preparation I
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 4; Writing Level 3
Essays on a unified and collaborative approach to learning basic language skills. Emphasizes reading, writing, speaking, listening, and thinking skills. Students help each other in exploring topics of their choice from various academic disciplines. (F, Sp, Su)

ENRI 152 Orientation Workshop: College Reading Survival Skills
Semester Prerequisite: None
Designed for beginning college students, whether recent high school graduates or returning adults. Describes college reading survival skills. Concentrates on reading speed, comprehension, and note-taking skills. (F)

ENRI 162 Orientation Workshop: College Writing Skills
Semester Prerequisite: None
This course is designed for new and returning students. As well as others from the community. Students learn to develop their writing skills, including the study of writing for various disciplines, the writing process, and the basics of grammar, sentence style, and punctuation. (Su)

ENVR - ENVIRONMENTAL SCIENCE

ENVR 121 Environmental Rules and Regulations
Semester Prerequisite: None
An overview of federal and state environmental regulations (e.g., Clean Air Act, Clean Water Act, OSHA) and agency rules that control pollution by regulating discharges to air, water, and land. The emphasis is on those regulations that apply to the handling, treatment, storage, and disposal of hazardous materials. (P)

ENVR 122 Environmental Sampling and Instrumentation
Semester Prerequisite: CHEM 151, CHEM 161
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, sludge, drums, and tanks. Appropriate sampling protocols, records, quality assurance, safety, and decontamination are stressed. (Sp)

ENVR 131 Industrial Processes and Pollution Prevention
Semester Prerequisite: None
A nontechnical introduction to general manufacturing processes with emphasis on waste reduction and pollution prevention strategies, functions within facilities, and selected unit operations widely used in industry. Examples and case studies of specific industries will be examined with respect to their basic processes, material flow, worker health and safety, waste reduction, and pollution prevention. (F)
ESLA 106 English as a Second Language: Beginning
Semester Prerequisite: Placement Test Departmental Approval
For advanced beginning ESL students who have been introduced to some basic English structures but have not yet mastered them. Classes focus on the spoken form and homework on the written form. (F, Sp, Su)

ESLA 108 English as a Second Language: Intermediate
Semester Prerequisite: Placement Test Departmental Approval
For intermediate ESL students. Reinforces the basic structures of English and introduces more advanced grammatical structures. Increased attention to reading and writing. (F, Sp, Su)

ESLA 110 English as a Second Language: Advanced
Semester Prerequisite: Placement Test Departmental Approval
For advanced ESL students. Reinforces English instruction and emphasizes writing, reading, and oral communication for college-level work. Students write and revise essays, participate in a variety of speaking and listening activities, and practice college reading skills. (F, Sp, Su)

ESLT - ENGLISH AS A SECOND LANGUAGE: TECHNICAL

ESLT 011 Grammar and Writing I
Semester Prerequisite: Placement Test Departmental Approval
This course is for beginning-level non-native speakers of English. Students are introduced to the basics of English grammar and practice simple sentences, commands, and requests. Students focus on key structures and practice them through a variety of language exercises, including short writings of up to paragraph length. (F, Sp)

ESLT 012 Grammar and Writing II
Semester Prerequisite: Placement Test Departmental Approval
This course is designed to provide non-native speakers of English with practice in the basics of English grammar through a variety of contextualized language exercises. Students will practice a wide range of grammatical forms, as well as situationally appropriate language use. Students will strengthen their writing skills at the sentence and paragraph levels. (F, Sp)

ESLT 013 Grammar and Writing III
Semester Prerequisite: Placement Test Departmental Approval
This course is designed to provide non-native speakers of English with a review of basic English grammar, practice with complex grammatical structures, and improvement of their writing skills, including those related to the essay. (F, Sp)

ESLT 014 Grammar and Writing IV
Semester Prerequisite: Placement Test Departmental Approval
This course is designed to provide advanced non-native speakers of English with the opportunity to identify their weaknesses in using English grammar and mechanics and develop a systematic study plan for understanding those weaknesses and correcting them. Students will improve their writing skills, including those related to the essay. (F, Sp)

ESLT 021 Speaking/Listening I
Semester Prerequisite: Placement Test Departmental Approval
This course is designed to teach American English pronunciation and conversational patterns to non-native speakers of English. Students will practice speaking and listening comprehension skills. (F, Sp)

ESLT 022 Speaking/Listening II
Semester Prerequisite: Placement Test Departmental Approval
This course is designed to provide intensive practice in pronunciation and conversational English. Lessons are designed to reinforce English grammatical structures, increase students' intelligibility and listening comprehension, and develop fluency in spoken English. (F, Sp, Su)

ESLT 023 Speaking/Listening III
Semester Prerequisite: Placement Test Departmental Approval
This course is designed to give non-native speakers of English intensive practice in conversation skills and listening comprehension. Students will review American English pronunciation, stress and intonation patterns, and practice a variety of oral communication skills, including interviewing, rehearsed oral presentations, and extemporaneous speech. (F, Sp)

ESLT 024 Speaking/Listening IV
Semester Prerequisite: Placement Test Departmental Approval
This course is designed to provide advanced non-native speakers of English with practice in spontaneous and formal conversation skills. Students will practice listening skills, interviewing, problem-solving, and oral presentations. (F, Sp)

ESLT 031 Reading I
Semester Prerequisite: Placement Test Departmental Approval
This course is designed to teach basic reading skills to non-native speakers of English. Classroom exercises focus on vocabulary development and the ability to discuss and report on the assigned readings. (F, Sp)

ESLT 032 Reading II
Semester Prerequisite: Placement Test Departmental Approval
This course is designed to help non-native speakers of English develop their general reading skills and increase their vocabulary level. Students will learn to identify main ideas, understand English idioms, and increase their reading speed while maintaining comprehension. (F, Sp)

ESLT 033 Reading III
Semester Prerequisite: Placement Test Departmental Approval
This course is designed to give non-native speakers of English practice in reading scientific and technical texts. Assignments will focus on the development of technical vocabulary, identification of main ideas and important details, and summarizing information from textbooks. (F, Sp)

ESLT 034 Reading IV
Semester Prerequisite: Placement Test Departmental Approval
This course is designed for non-native speakers of English who need more practice in reading before they enter regular college courses. Course work will include reading college-level texts, vocabulary building, familiarity with idioms, practicing summaries, and paraphrasing main ideas. (F, Sp)

ESLT 050 Language Lab
Semester Prerequisite: Departmental Approval
This course is designed to provide non-native speakers of English with extensive, individualized programs of listening and pronunciation improvement. A student's laboratory work will be designed to reinforce his or her work in other ESL classes and to correlate his or her English proficiency. (May repeat for credit one time.) (F, Sp)

FIRE - FIRE SCIENCE

FIRE 100 Introduction to Fire Fighting
Semester 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, Su)

FIRE 101 Michigan F.F.T.C. Basic Fire Training Level I A and B
Semester Prerequisite: Admission to Program
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 Michigan F.F.T.C. Basic Fire Training Level II C and D
Semester Prerequisite: FIRE 101
Level II is basic training required for all career firefighters in the State of Michigan. Training is certified by the Michigan Fire Fighters Training Council and includes advanced fire suppression, aerial operation, life safety, and physical fitness. (F, Sp, Su)

FIRE 110 Fire Prevention and Law
Semester 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 for the Fire Service
Semester 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 – GEOG 297

FIRE 120 Chemistry of Hazardous Materials
Semester Prerequisite: None
A college-level chemistry course focusing on hazardous materials encountered by firefighters. Contains specific elements of NFPA 741, 742, and OSHA CFR 1041.201. Topics include atomic and molecular theory, bonding properties of elements, oxidation and reduction reactions, kinetic-molecular theory, solutions, and electrochemistry. Includes Michigan Haz-Mat First Responder Certification. (F)

FIRE 123 Fire Protection Systems and Equipment
Semester Prerequisite: None
Identifies fixed systems typically encountered by firefighters responding to industrial complexes or specialized environments. Emphasizes selection and design of equipment for fire, life safety, and emergency egress. Includes practical applications of knowledge through hands-on training. (F)

FIRE 130 Hydraulics and Pump Operations
Semester Prerequisite: TECH 100/MATH 650
Describes the fundamentals of hydraulics, including water supply problems, standards and pump requirements, and practical application of knowledge to firefighting problems. Includes selected portions of NFPA 1901 and 1902. (Sp)

FIRE 150 Fire Command and Operations
Semester Prerequisite: None
This course centers on the initial attack, scene management, and overall field operations from a company officer's perspective. Deals separately with Engine and Truck Command Operations including initial assignments, use of resources, rescue, and salvage. Covers selected portions of NFPA 1002, 1410, 1901, and 1902. Covers the National Fire Academy Incident Command System. (Sp)

FIRE 210 Fire Investigation
Semester Prerequisite: FIRE 101/Firefighter/Engineer/Operations
This course investigates fire behavior, importance of determining cause and origin, accidental, incendiary, or arson type fires. Describes methods of identifying and investigating origin for arson and covers applicable laws and court procedures. (Sp)

FIRE 220 Hazardous Materials in the Fire Service
Semester Prerequisite: FIRE 120

FIRE 250 Fire Administration
Semester Prerequisite: Fire Command/Departmental Approval
This course offers the student with a better understanding of motivation and the proper reactivity management. Covers leadership and collective bargaining, fiscal management, and political interactions. Presents modern approaches to the challenges which face today's fire executives. (Sp)

FREN 115 Conversational French I
Semester 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
Semester Prerequisite: FREN 115/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
Semester Prerequisite: None
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
Semester Prerequisite: FREN 121/FREN 122/Equivalent/Approval
Second course of a two-semester sequence. Introduction to more complex structures and patterns, and more active use of spoken and written French. (Sp)

FREN 201 Intermediate French I
Semester Prerequisite: FREN 102/FREN 122/Equivalent/Approval
First course of a two-semester sequence. Course includes reading, 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)

GEOL 120 Introduction to Geography
Semester Prerequisite: None
An introductory course designed to provide contemporary geographic ideas and techniques to study the interaction between people and their physical environment. (F)

GEOL 121 Physical Geography
Semester Prerequisite: None
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 mapping techniques, land use analysis, and satellite interpretation. Field trips will be an integral part of the course. (F, Sp, Su)

GEOL 200 World Regional Geography
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 5; Writing Level 3
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)

GEOL 202 Geography of North America
Semester Prerequisite: None
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 the various subregions. (Sp)

GEOL 203 Economic Geography
Semester Prerequisite: None
The study of the distribution of economic activities throughout the world. Emphasizes agriculture, resources, population, industry, urbanization, and trade. (F, Sp, Su)

GEOL 295 One-Credit Independent Study in Geography
Semester Prerequisite: Departmental Approval
Independent project involving reading and research in geography. The project, chosen by the student, must include a component of the departmental approval. It must also meet specific academic goals. (F, Sp, Su)

GEOL 296 Two-Credit Independent Study in Geography
Semester Prerequisite: Departmental Approval
Independent project involving reading and research in geography. The project, chosen by the student, must include a component of the departmental approval. It must also meet specific academic goals. (F, Sp, Su)

GEOL 297 Three-Credit Independent Study in Geography
Semester Prerequisite: Departmental Approval
Independent project involving reading and research in geography. The project, chosen by the student, must include a component of the departmental approval. It must also meet specific academic goals. (F, Sp, Su)
GEOL 202 Geology of Western National Parks
Semester Prerequisite: None
This course is a survey of the geological features, surface processes, and history of the western national parks and monuments. The geology of those sites is presented within the context of geologically defined regions and their sequence of origin. Emphasis is placed on video and slide presentations accompanying lecture. (Su)

GEOL 210 Geology Field Studies
Semester Prerequisite: Geology Course/Geology Course Concurrently 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 Lodge quarries, Western U.S. regional geology, etc.) (Su)

GEOL 221 Earth Materials and Processes: Physical Geology
Semester Prerequisite: 2.0 Minimum in ISCI 110/Science Inventory Recommended
Basic Skills Prerequisite: 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 Earth and Life Through Time: Historical Geology
Semester Prerequisite: 2.0 Minimum in ISCI 110/Science Inventory Recommended
Basic Skills Prerequisite: 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
Semester Prerequisite: 2.0 Minimum in ISCI 110/Science Inventory Recommended
Basic Skills Prerequisite: 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. (Sp)

GERO 100 Introduction to Human Aging
Semester Prerequisite: None
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)

GERO 101 Programs and Services for the Aging
Semester Prerequisite: GERO 100 Recommended
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 112 Planning for Retirement
Semester Prerequisite: None
This course covers financial matters, legal affairs, physical and mental health, being alone, housing choices, employment, and volunteer opportunities, community resources, and meaningful use of time. It includes discussion of planning and decision-making skills and development of a personalized plan for retirement. (F, Sp)

GERO 119 The Aging Process: Facts, Myths, Changes, and Resources
Semester Prerequisite: None
This course includes an overview of facts and myths associated with older adults, including normal physical changes and their implications; social/moral aspects of aging, including communication issues; and federal, state, and local resources for the older adult. (F, Sp)

GERO 121 Senior Group Program Planning
Semester Prerequisite: None
This course offers an overview for planning senior adult programs, basic principles of group leadership, ideas and resources for activities for older adults, motivating older adults to participate, and scheduling activities. (F, Sp)

GERO 125 Volunteers: Recruiting, Retaining, Rewarding
Semester Prerequisite: None
This course describes the basic processes of volunteer management: techniques for assessing current and future volunteer utilization; and innovative methods for recruitment, retention, and recognition of volunteers. It provides an applied focus to assist supervisors and managers as they recruit and work with volunteers. (F, Sp)

GERO 126 Volunteers: Interviewing and Placement
Semester Prerequisite: None
This course focuses on volunteer management processes of interviewing and placement, including conducting an effective interview, legal restrictions to the interview process, appropriate placement of volunteers, and termination or reassignment. (F, Sp)

GERO 131 Planning for Older Adults with Developmental Disabilities
Semester 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 141 Gerontological Practices: Case Assessment and Intervention
Semester Prerequisite: None
This course presents an overview of the case management pathway in providing direct services to individual older adult clients from intake through service termination. It includes a focus on issues that have added impact on the older person and techniques that are effective in case management for that population. (F, Sp)

GERO 161 Issues of Aging: Sexuality
Semester 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 Medication and Alcohol Use Among Older Adults
Semester 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
Semester 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: Disability and Consent
Semester Prerequisite: None
This course focuses upon issues such as guardianship, conservatorship, power of attorney, the living will, joint tenancy, nursing home residency, and will commit- ment, including actual and perceived choices a person has as aging and illness occur. (F, Sp)

GERO 170 Depression: Recognition and Treatment
Semester 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 Techniques for Caring for Persons with Dementia
Semester 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, programmable approaches, handling problem behaviors, a task breakdown approach, environmental adaptations, and role of the family are discussed. (F, Sp)
GERO 173 – GRET 223

GERO 173 Activities: Older Adults with Alzheimer’s/Related Disorders
Semester 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 202 Mental Health and Aging
Semester Prerequisite: GERO 100 Recommended
This course presents skills and adaptations for maintaining good mental health in late life. It explores family and social factors; personality, stress and loss; assessment, treatment, and care of older persons with mental disorders; and response of the mental health system and aging services network. It includes communication skills for interacting with older adults. (Sp)

GERO 204 Aging and Health
Semester Prerequisite: GERO 100 Recommended
This course examines aging and health from an applied perspective for the human services provider, including implications of normal/pathological changes in body systems and strategies used in working with health systems on behalf of older adults. Emphasis is on the assessment and maintenance of function, and benefits of lifelong health promotion. (F)

GERO 282 Gerontology Field Placement I
Semester Prerequisite: SOWK 203, Departmental Approval
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 Field Placement II
Semester Prerequisite: GERO 282, Departmental Approval
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 about 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 - GEOGRAPHICAL RESOURCE AND ENVIRONMENTAL TECHNOLOGY

GRET 203 MicroStation Beginning
Semester Prerequisite: LAND 282/Departmental Approval
This entry-level, computer-aided design and drafting course uses MicroStation software on an Intel workstation or PC. Students will create 2-D drawings using basic graphic tools and procedures. (F, Sp)

GRET 204 MicroStation Graphic Environment
Semester Prerequisite: GRET 203
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. (F, Sp)

GRET 205 Principles of Geographic Information Systems
Semester Prerequisite: None
This course describes the components of a basic GIS and how they are assembled. Requisite of data, maps, and other information used to build a database will be highlighted. A basic client project will be demonstrated step-by-step through various applications in GIS. (F, Sp, Su)

GRET 208 Advanced Techniques in GIS
Semester Prerequisite: GRET 204
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. (F, Sp)

GRET 209 Applications in Geographic Information Systems
Semester Prerequisite: GRET 205, GRET 208
This course specifically deals with all of the possible application areas for GIS, both present and future. Applications 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 210 Principles of Global Positioning Systems
Semester 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)

GRET 211 GIS Mapping Systems
Semester Prerequisite: None
This course covers the basics of computer mapping systems and how they relate to computer design, graphics, and GIS. C-Map, MapInfo, 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. (F, Sp)

GRET 213 Advanced MicroStation
Semester Prerequisite: GRET 203
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 of or beginning MicroStation class is necessary for success in this class. (F, Sp)

GRET 214 G.R.A.S.S. Beginning
Semester Prerequisite: GRET 204
This computer-based course will explore the Geographical Resource Analysis Support System (G.R.A.S.S.), software package developed by the U.S. Army Corps of Engineers. The specific functions of the software will be explored as it relates to the world of Geographic Information Systems. This is a beginning course. (F)

GRET 216 Introduction to MicroStation
Semester Prerequisite: None
This is a course to introduce the student to the basics of MicroStation. MicroStation supports a range of commands for placing and manipulating elements in the design file. A student can apply these commands for either a MicroStation personal computer setup or the INFOMIX-SQL/4D Base II plus database packages. The course is designed for Intergraph Workstation lab use, as well as the MicroStation PC. (F, Sp, Su)

GRET 218 GIS Design Systems
Semester Prerequisite: None
Database design entails identification of relevant data sources, applying cartographic standards, and managing a tabular database scheme that will relate to cartographic layers in the GIS. Tools and techniques for data identification and conversion are presented in the context of an example design for a municipal GIS, with emphasis on geodetic reference frame, base map, and cadastral overlay. (F, Sp)

GRET 219 Data Sets for GIS
Semester Prerequisite: None
This course focuses on available commercial and public domain data sets for GIS. Three data sets are completely described and documented according to cartographic characteristics and attribute. GIS systems are provided to participants for their exploration of data sets. Applications developed using the data sets are demonstrated. (F, Sp, Su)

GRET 220 Hydrological Systems
Semester Prerequisite: None
This course covers various aspects of water resources as they pertain to the geographical 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)

GRET 221 Landforms and Soil Systems in GIS
Semester Prerequisite: None
This course will discuss the important classifications of land 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 areas will be emphasized. (Sp)

GRET 223 Environmental Resource Management
Semester 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)
GRET 240 Basic Map Orientation and Construction
Semester Prerequisite: None
The basic principles, functions, and the 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)

GRET 241 Air Photo Interpretation
Semester Prerequisite: GRET 240/Departmental Approval
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)

GRET 243 ORACLE for Geographic Information Systems
Semester 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, Sp)

GRET 244 Beginning UNIX: GIS Environment
Semester Prerequisite: None
This is a beginning course which acts as an introduction to the UNIX operating system. UNIX System V, the AT&T offered release, will be the version covered in this course. UNIX as it relates to operating systems in the GIS environment will be highlighted. This is a hands-on computer exercise course. (F)

GRET 248 GIS Analysis Systems
Semester 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 252 Basics of ARC/INFO
Semester 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 254 Orientation to ARC/INFO
Semester Prerequisite: LANC 282/Departmental Approval
This course is 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 255 Beginning ARC/INFO
Semester Prerequisite: LANC 282/Departmental Approval
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 256 Advanced ARC/INFO
Semester Prerequisite: GRET 255
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 GIS and TIN. The student will also develop projects using data sets. Students will develop a complete GIS project utilizing the full ARC/INFO module. (F, Sp)

GRET 285 GRET Independent Study
Semester Prerequisite: Instructor Approval
The independent study is designed for students who wish to pursue a specialty area in GIS beyond that in which is offered in our curriculum. Inquiry through research and design of landscapes is required. (F, Sp, Su)

GRET 296 GRET Project Lab
Semester Prerequisite: Instructor 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 of landscapes is required. (F, Sp, Su)

GRET 297 GRET Project Lab
Semester Prerequisite: Instructor 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)

GRMN 115 Conversational German I
Semester Prerequisite: None
The first course in a two-semester sequence for persons with little or no knowledge of German. Emphasis on listening and speaking skills. Students learn correct pronunciation, essential vocabulary, 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
Semester Prerequisite: GRMN 115/Equivalent
The second course in a two-semester sequence for persons with little or no knowledge of German. Emphasis on 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
Semester Prerequisite: None
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
Semester Prerequisite: GRMN 101/GRMN 121/Equivalent/Approval
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
Semester Prerequisite: GRMN 122/GRMN 122/Equivalent/Approval
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
Semester Prerequisite: GRMN 201/Equivalent/Approval
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 150 African-American History
Semester Prerequisite: None
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
Semester Prerequisite: Instructor Approval
Covers problems of research, writing, philosophy, and interpretation of history, involving a detailed examination of a particular area of American history. (Sp)

HIST 211 U.S. History to 1877
Semester Prerequisite: 2.0 Minimum in WRIT 121
Basic Skills Prerequisite: Reading Level 5, Writing Level 8
A history of the United States from colonial beginnings through reconstruction. (F, Sp, Su)
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites/Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 212</td>
<td>U.S. History: 1877 to the Present</td>
<td>4</td>
<td>Semester Prerequisite: 2.0 Minimum in WRIT 121</td>
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<tr>
<td></td>
<td>Basic Skills Prerequisite: Reading Level 5; Writing Level 8</td>
<td></td>
<td>A History of the United States from the end of reconstruction to the present. (F, Sp, Su)</td>
</tr>
<tr>
<td>HIST 214</td>
<td>African History</td>
<td>4</td>
<td>Semester Prerequisite: WRIT 121 (ENGL/WRIT 122 Recommended)</td>
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<tr>
<td></td>
<td>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)</td>
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<tr>
<td>HIST 220</td>
<td>Michigan History</td>
<td>4</td>
<td>Semester Prerequisite: WRIT 121 (ENGL/WRIT 122 Recommended)</td>
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<tr>
<td></td>
<td>A survey of the political, economic, and social development of Michigan from pre-colonial times to the present. (F)</td>
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<tr>
<td>HIST 230</td>
<td>British History</td>
<td>4</td>
<td>Semester Prerequisite: WRIT 121 (ENGL/WRIT 122 Recommended)</td>
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<tr>
<td></td>
<td>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)</td>
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</tr>
<tr>
<td>HIST 246</td>
<td>Latin American History</td>
<td>4</td>
<td>Semester Prerequisite: 2.0 Minimum in WRIT 121</td>
</tr>
<tr>
<td></td>
<td>Basic Skills Prerequisite: Reading Level 5; Writing Level 6</td>
<td></td>
<td>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)</td>
</tr>
<tr>
<td>HIST 250</td>
<td>History of Modern Asia</td>
<td>4</td>
<td>Semester Prerequisite: 2.0 Minimum in WRIT 121</td>
</tr>
<tr>
<td></td>
<td>Basic Skills Prerequisite: Reading Level 5; Writing Level 6</td>
<td></td>
<td>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)</td>
</tr>
<tr>
<td>HIST 260</td>
<td>Conflict and Revolution in Southern Africa</td>
<td>4</td>
<td>Semester Prerequisite: WRIT 121 (ENGL/WRIT 122 Recommended)</td>
</tr>
<tr>
<td></td>
<td>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)</td>
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<tr>
<td>HIST 263</td>
<td>Seminar: Russia and the CIS</td>
<td>3</td>
<td>Semester Prerequisite: None</td>
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<tr>
<td></td>
<td>A survey of Russia and its people from the Russian Revolution of 1905 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)</td>
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<tr>
<td>HIST 265</td>
<td>Seminar: The American Legal Tradition</td>
<td>3</td>
<td>Semester Prerequisite: None</td>
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<tr>
<td></td>
<td>A historical survey of the origins, growth, and development of the American legal-constitutional process. The legal system is studied in context of American culture by examining the leading cases, philosophers, scholars and institutions, and approaches to the study of law. (Su)</td>
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<tr>
<td>HIST 266</td>
<td>Independent Study</td>
<td>1</td>
<td>Semester Prerequisite: Departmental Approval</td>
</tr>
<tr>
<td></td>
<td>Special research projects and/or individual readings in history. Students will invest no less than 32 hours for each credit earned. Enrollment is usually restricted to honors students who have grade point averages of at least 3.0 in courses offered by this department. (F, Sp, Su)</td>
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</tbody>
</table>

**HMFS 101** Introduction to Hospitality and Food Service Operations

- **Semester Prerequisite:** None
- **Basic Skills Prerequisite:** Reading Level 2; Writing Level 4
- Introduction to the hotel-motel-food service industry explaining the individual roles of the various departments in food service and lodging operations. (F, Sp, Su)

**HMFS 105** Hotel and Restaurant Human Resource Management

- **Semester Prerequisite:** None
- This course is a survey of principles and practices for managing human resources in the hospitality industry. Includes such topics as staffing, discipline, hiring, termination, and their corresponding rules and regulations. (F, Sp)

**HMFS 110** Food Service Sanitation

- **Semester Prerequisite:** None
- Sanitation is essential to the success of a food service business. This course covers food sanitation, food poisoning, and other related topics. (F, Sp)

**HMFS 112** Food Service Sanitation

- **Semester Prerequisite:** None
- This course is a survey of sanitation in the food service industry. Topics include food handling, sanitation practices, and related regulations. (F, Sp)

**HMFS 131** Food and Beverage Management

- **Semester Prerequisite:** HMFS 131
- The principles of this course are to enable the student to achieve a comprehensive understanding of the food and beverage industry. This course will provide the student with a comprehensive understanding of the food and beverage industry. (F, Sp)

**HMFS 132** Food Production

- **Semester Prerequisite:** HMFS 131
- This course is designed to strengthen students' basic knowledge in food production. Emphasis will be placed on the role of potential managerial personnel and the food and beverage industry employees in formulating the structure for sound business management in the hospitality field. (F, Sp)

**HMFS 134** Nutrition

- **Semester Prerequisite:** None
- Discusses nutrition, RDA's, energy balance, weight control, variety of diets and dietary guidelines, food processing, natural and organic foods, and fast and fast food. (F, Sp)

**HMFS 135** Quantity Food Purchasing

- **Semester Prerequisite:** None
- This course is the study of standards in quality and quantity of food, beverages, chips, glass, silver, linen, furnishings, and supplies. It will also cover writing specifications and establishing procurement policies. This course emphasizes the development of purchasing programs and the evaluation of purchase policies. (F)

**HMFS 137** Food Service Catering

- **Semester Prerequisite:** None
- This course is designed to acquaint the student with the food service industry. The student will learn how to obtain and manage a food service business. The student will also learn how to prepare, market, and sell food products, prepare menus, purchase equipment, and manage the food service operation. (F)

**HMFS 190** Internship and Seminar

- **Semester Prerequisite:** None
- An internship available to hotel/restaurant students who have completed or are approaching 400 hours of work experience in the hospitality industry. A semester project is required. (F, Sp, Su)
HMFS 203 Hotel-Restaurant Law
Semester Prerequisite: None
The course provides an awareness of the responsibilities and rights which the law imposes upon and grants to the innkeeper in the prevention of legal problems so as to minimize legal action against the property. (F, Sp)

HMFS 204 Human Relations/Supervisory Development
Semester Prerequisite: None
A human relations course covering the role of management in the hospitality industry. Specific emphasis on the supervisor's role as a leader, recruiter, trainer, and personnel manager. (F, Sp)

HMFS 205 Hospitality Management
Semester Prerequisite: None
A survey of management principles and practices in the hospitality industry. Includes topics such as theory of management, the management process, and management problems in key hospitality areas. (F, Sp)

HMFS 206 Front Office Management
Semester Prerequisite: None
Organization, control, and operation of the front office in the reservation and sale of rooms, and its service. Keeping of accurate accounts and presenting bills and receipts of payment. (F, Sp)

HMFS 207 Financial Control and Management I
Semester Prerequisite: None
A systematic, integrated study of hotel-motel and food institutional activities. Principles and practices related to financial management will be presented. Financial statements, front office procedures, and the interpretation of accounts and statements unique to the hospitality industry will be included. (F, Sp)

HMFS 208 Financial Control and Management II
Semester Prerequisite: HMFS 207
A course designed to integrate the varied elements of the HMFS program into a cohesive package that demonstrates how a business is established and operated. A term project involving the hypothetical establishment of a business of the student's choice will be the primary learning tool. (F, Sp)

HMFS 214 Supervisory Housekeeping
Semester Prerequisite: None
Provides an overview of the fundamentals of housekeeping management. This course describes the management functions, tools, and practices required in today's lodging and institutional housekeeping departments. (Sp)

HMFS 215 Hospitality Sales/Marketing
Semester Prerequisite: None
This course is designed to provide the student with a working knowledge and practical experience which will enable them to develop and implement strategic marketing plans for hospitality properties. (F, Sp)

HMFS 229 Convention and Meeting Management
Semester Prerequisite: None
Convention management is an integral part of today's hospitality industry. This course provides insight into convention marketing, salesmanship, detail, execution, communication, and management. A comprehensive study of methods and techniques for better service. (F)

HMFS 232 Food and Labor Cost Control
Semester Prerequisite: None
This course covers the essential principles and procedures to control food, beverage, and labor costs. Sales, income, and resources within the food service industry are also analyzed. (Sp, Su)

HMFS 251 Wine Appreciation
Semester Prerequisite: None
The student will be familiarized with the five basic types of wine, a short history of wine and how wines are made; a mastery of the presentation and serving of wines, and judging for appearance, bouquet, and taste. The class will learn how to choose and store wines. (F)

HMFS 252 Wines of America
Semester Prerequisite: None
A survey of wine-growing areas of the United States with emphasis on the variety of wines selected. New York, Michigan, and Ohio. A study of wine making, comparative tasting, and field trips are used to acquaint the student with the wine industry in America. (Sp)

HMFS 254 Mixology
Semester Prerequisite: None
This course provides the student with a mastery of over 150 mixed beverages. It teaches the combination of the arts of efficient mixology and hospitality with control that distinguishes the "bartender" from the ordinary bartender. Mixology emphasizes the need of incorporating accuracy in the preparation of beverages. (F, Sp)

HMFS 260 Gourmet Basic Cookery
Semester Prerequisite: None
This course is designed to teach the beginner about the basics in menu planning, shopping, preparation, service, and cleanup involved in a meal. The student will become familiar with shopping lists, costs, recipes, measuring, weighing and nutritional information will be given as necessary. The student will be preparing foods for consumption. (F)

HMFS 261 Gourmet Italian Cookery
Semester Prerequisite: None
This course is designed to explore regional and national foods from Italy. The instructor will develop specially menus for each region. Students will learn to plan Italian meals, purchase and prepare foods from the meals served. The student will be preparing food for consumption. This course covers basic cooking techniques within regional areas of Italy. Local talent and community Italian experts contribute to the culinary part of the fare. (F)

HMFS 262 Gourmet Foreign Cookery
Semester Prerequisite: None
This course covers basic cooking using foreign foods from around the world, prepared and tasted by the student. Wine and cheese samplings are also a part of this course. (Sp)

HMFS 263 Gourmet American Cookery
Semester Prerequisite: None
This course is designed for the working person and explores four great cuisines: Regional American, French, Italian, and German. The course will include planning, preparing, cooking, serving, and eating gourmet meals. Special attention will be provided for budgeted low-cost preparation of restaurant gourmet entrees. (F)

HMFS 264 Gourmet Barbecue Cookery
Semester Prerequisite: None
This summer-oriented course explores innovative techniques of preparing food outside. Meats, vegetables, fruits, desserts, and drinks are all prepared throughout the term. (Su)

HMFS 266 Gourmet Chinese Cookery
Semester Prerequisite: None
Chinese cooking is noted for its diversity of taste, texture, and aroma. Chinese dishes to be prepared by the student include sweet and sour pork, chicken almond ding, and egg rolls, which will accentuate these characteristics through the use of sautéing and "red" cooking techniques. (F, Sp)

HMFS 273 Gourmet Cajun Cookery
Semester Prerequisite: None
Identification of various regional influences and cuisines which form the Cajun style, including Creole Cajun and Louisiana cooking. Identification of indigenous ingredients, seasonings, and cooking techniques used in Cajun cuisine. Histories of foods and techniques as well as contemporary perspectives on these cuisines. (Sp)

HMFS 274 Lean Gourmet Cookery
Semester Prerequisite: None
Basic cooking skills using lean meat, fresh herbs, spices, and chicken broth instead of cream. The focus of this course is on the food we eat. The student will learn the composition of food and why some foods make better choices for our diets than other foods. (F, Sp, Su)

HMFS 275 Bakery Products
Semester Prerequisite: None
A course designed to expose the student to various bakery products including pastries and bread. Demonstrations as well as student preparation in the diverse areas of the fine art of baking highlight this course. (F, Su)

HMFS 276 Ice Carving Seminar
Semester 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 a block of ice before the conclusion of the course. This is a hands-on course. (Sp)
HMFS 280 Food Decorating Garnishes 3
Semester Prerequisite: None
A basic course in the decoration and presentation of cold foods. This course will introduce the student to cold food specialization: vegetable carving, hors d'oeuvres, canapes, the use of spices, sauces, dressings, and complete buffet setup. Garde manger is the showcase for the artistic presentation of foods. Student preparation. (Sp)

HMFS 281 Soups and Sauces 3
Semester Prerequisite: None
A basic course in preparing and presenting soups using traditional and modern techniques. Students will learn cold food specialties, vegetable carvings, hors d'oeuvres, canapes, sauces, soups, and dressings. Students will receive valuable education along with knowledge of proper garnishes for appetizers, soups, salads, entrees, and desserts. (Sp)

HONR - HONORS

HONR 151 Honors Colloquy I 1
Semester Prerequisite: Honors Program Approval
An interdisciplinary forum for students and faculty of the Honors Program. Consists of presentations by recognized experts in such fields as science, humanities, mathematics, and computer science, communication, education, and the social sciences. Followed by discussion and interchange of ideas. Requires follow-up written reports. (F)

HONR 152 Honors Colloquy II 1
Semester Prerequisite: Honors Program Approval
An interdisciplinary forum for students and faculty of the Honors Program. Consists of presentations by recognized experts in such fields as science, humanities, mathematics, and computer science, communication, education, and the social sciences. Followed by discussion and interchange of ideas. Requires research writing using methodology of the Liberal Studies disciplines. (F)

HONR 155 Service Learning Practicum 1
Semester 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. (Sp)

HORT - HORTICULTURE

HORT 101 Principles of Precision Agriculture 2
Semester Prerequisite: None
This course introduces the field of precision agriculture technology. The combining of the latest technologies, e.g., Global Positioning Systems and Integrated Pest Management, make traditional agricultural practices as accurate and customized as possible for each specialized crop. (F, Sp)

HORT 102 Introduction to Ornamental Horticulture 2
Semester 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 105 Pests and Problems of Ornamental Plants 2
Semester 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
Semester 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
Semester Prerequisite: HORT 107/Departmental Approval
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
Semester Prerequisite: HORT 107
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, cascades, cymbiums, and arm bouquets. This is a hands-on class with students working with floral materials each week. (F, Sp, Su)

HORT 143 Cut Flower, Foliage and Potted Plant Identification 4
Semester Prerequisite: None
The functional aspects of plant material commonly found in the floriculture industry will be covered. 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. (F, Sp, Su)

HORT 200 Vegetation and Weed Management 3
Semester Prerequisite: HORT 102
Students will develop skills necessary to monitor, control, and identify by species 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 effectiveness. (F, Sp)

HORT 201 Principles of Sustainable Agriculture 3
Semester 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. (F)

HORT 230 Plant Propagation and Nursery Operations 4
Semester Prerequisite: HORT 102/Departmental Approval
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 and Environment 3
Semester 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
Semester Prerequisite: HORT 235
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
Semester Prerequisite: HORT 102
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 and Nursery Sales Management 3
Semester 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 Landscape Independent Study
Semester Prerequisite: Instructor Approval
This independent study 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)

### HORT 296 Horticulture Project Lab
Semester Prerequisite: Instructor Approval
This independent study 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)

### HORT 297 Horticulture Project Lab
Semester Prerequisite: Instructor Approval
This independent study 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 110 Seminar: Stratford Theater Trip
Semester Prerequisite: Departmental Approval
A "cultural crucible" providing students the opportunity to experience exemplary theatrical productions. Academic breadth and historical perspective are achieved by attending performances, lectures, and interacting with professionals. Skills of critical analysis are also exercised through exposure to fine classical writing and assessment of both oral interpretation and text. (Su)

#### HUMS 120 Western Art and Music History
Semester Prerequisite: None
An introduction to the masterpieces of art and music from Pre-Roman times to the 20th century. Audio and visual materials will be used to illustrate artistic and musical contributions of Europe and America to the development of Western culture. (F, Sp, Su)

#### HUMS 160 Mythology
Semester Prerequisite: None
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
Semester Prerequisite: 2.0 Minimum in WRIT 121
Basic Skills Prerequisite: Reading Level 5; Writing Level 5
Surveys the history of painting, sculpture, and architecture of world civilizations in Africa, the Americas, Asia and Europe from prehistoric times to the 15th century. Emphasizes analysis and comparison of artistic concepts, styles, 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
Semester Prerequisite: 2.0 Minimum in WRIT 121
Basic Skills Prerequisite: Reading Level 5; Writing Level 5
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, techniques, and investigates how the arts reflect ideas, issues, and values of society and the individual. (F, Sp, Su)

#### HUMS 213 World Civilizations I
Semester Prerequisite: 2.0 Minimum in WRIT 121
Basic Skills Prerequisite: Reading Level 5; Writing Level 5
Surveys the literature and art, science and technology, philosophy and religion, and 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
Semester Prerequisite: 2.0 Minimum in WRIT 121
Basic Skills Prerequisite: Reading Level 5; Writing Level 5
Surveys the literature and art, science and technology, philosophy and religion, and 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 220 Japanese Civilization
Semester Prerequisite: None
This course traces the development of Japan's cultural tradition with strong emphasis on history, art, and literature. Further, this course demonstrates that modern Japan can best be understood in light of its distinctive cultural traditions. (F)

#### HUMS 225 Great Lakes Native Americans: History and Tradition
Semester Prerequisite: None
Surveys the Great Lakes Native American culture and people, the differences in oral tradition and written histories of the Great Lakes Anishinaabek (First People), the Talking Circle for community problem solving, and an introduction to the language. (F, Sp, Su)

#### HUMS 260 Seminar: Ancient Egypt
Semester Prerequisite: 2.0 Minimum in WRIT 121
Basic Skills Prerequisite: Reading Level 5; Writing Level 5
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 discoveries of Egyptian archaeology will also be featured. (F)

#### HUMS 265 Seminar: Ethical Issues in Medicine
Semester 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 Independent Study
Semester Prerequisite: Departmental Approval
Special research projects and/or individual readings in humanities. Students will invest no less than 32 hours for each credit earned. Enrollment is usually restricted to honors students who have grade point averages of at least 3.0 in courses offered by this department. (F, Sp, Su)

#### HUMS 296 Independent Study
Semester Prerequisite: Departmental Approval
Special research projects and/or individual readings in humanities. Students will invest no less than 32 hours for each credit earned. Enrollment is usually restricted to honors students who have grade point averages of at least 3.0 in courses offered by this department. (F, Sp, Su)

### HUSE - HUMAN SERVICES

#### HUSE 100 Introduction to Human Services: Resources and Interventions
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 4; Writing Level 3
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)

#### HUSE 101 Personal Dimensions of Human Services
Semester 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)
IDMS 281  Clinical Experience II  9
Semester Prerequisite: IDMS 280
Building on material presented in IDMS 280, this is the second course in a three-
semester sequence in diagnostic medical sonography. The course is programmed with specific performance objectives. Credit is arranged for each individual semes-
ter with a ratio of one credit to three clinical clock hours. (Sp)

IDMS 282  Clinical Experience III  12
Semester Prerequisite: IDMS 281
Based on material presented in IDMS 281, this is the third course in a three-
semester sequence of clinical application in diagnostic medical sonography. The course is programmed with specific performance objectives. Credit is arranged for each individual semester with a ratio of one credit to three clinical clock hours. (Su)

IMAG 101  Basic Photography for Nonmajors  2
Semester Prerequisite: None
Students will learn to use camera controls, exposure controls, photographic com-
pilation, and lighting to make better photographs. Color film and commercial pro-
cessing 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 102  Advanced Photo for Nonmajors  2
Semester Prerequisite: IMAG 101/Equivalent
A continuation of IMAG 101. Students will learn to apply advanced design con-
cepts, techniques, and accessories for problem solving and creative image mak-
ing. Color film and commercial processing will be used. For students who do not plan to major in imaging technology. (F, Sp)

IMAG 105  Color Printing for Nonmajors  3
Semester Prerequisite: IMAG 102/Departmental Approval
A basic color printing course designed for students who do not plan to major in imaging technology. Emphasis will be on exposure controls of negative color films and the production of quality color prints from both negatives and slides. (Su)

IMAG 111  Introduction to Photographic Technology I  4
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 3; Writing Level 3; 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 Fundamentals for Imaging Technologies  3
Semester Prerequisite: IMAG 111/IMAG 111 Concurrently, Departmental Approval
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, Su)

IMAG 113  Lighting Concepts and Applications  3
Semester Prerequisite: IMAG 111/IMAG 111 Concurrently, Departmental Approval
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, Su)

IMAG 114  Introduction to Photographic Color Technology  3
Semester Prerequisite: IMAG 112, IMAG 113, Departmental Approval
Basic Skills Prerequisite: Reading Level 5; Writing Level 3; Math Level 3
Introduces the student to the theories and applications of contemporary color photo-
graphic materials and processes. Students will learn to produce acceptable color images by applying the concepts of film selection, film loading, color temperature, lighting, and color image design to their evolving work. (F, Sp, Su)

IMAG 115  Color Directed Study  1
Semester Prerequisite: IMAG 114 Concurrently
Introduces student to practical applications of contemporary color photographic materials and processes. Students will learn through laboratory experiences, demonstrations, and other direct involvement with color imaging materials and equipment. Designed to increase the student's technical working knowledge and problem solving skills when working with currently available color photographic materials. (F, Sp, Su)

IMAG 117  Introduction to Photographic Technology II  4
Semester Prerequisite: IMAG 111, Approval Required
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 resolve technical, aesthetic, and communication problems. Successful completion required for continuation in the Imaging Technology Program (Still Track) at the 200 level. (F, Sp, Su)

IMAG 118  Film Production I  4
Semester Prerequisite: None
Introduces storytelling practices using sound and pictures. Students will learn to plan and produce short programs. Developing basic skills in plot structure, staging, scenery, photography, sound recording, editing, and audience evaluation. (F, Sp, Su)

IMAG 120  Photographic Technology Lab  3
Semester Prerequisite: IMAG 117/IMAG 118, Departmental Approval
Designed for students whose lack of photographic competencies prevent their continuation in the Imaging Technology Program above the 100 level. Individualized learning objectives are formulated for each student. Successful completion of these objectives will allow the student to continue into the 200 level course sequence. (Sp, Su)

IMAG 121  Imaging Technology  2
Semester Prerequisite: None
A survey of the imaging technology field, including the role of the imaging profes-
sional, materials, processes, and new technology as related to advertising, com-
munications, film/multimedia, illustration, portrait, and self-expression. Includes an overview of projected employment opportunities in imaging technology. (F)

IMAG 122  Imaging Technology Forum  1
Semester Prerequisite: None
Students will learn through demonstration, laboratory experiences, and other direct involvement in imaging technology. Includes presentations, demonstra-
tions, and workshops that expose students to the current state of development in the areas of hybrid imaging and emerging technologies. (Sp)

IMAG 201  Topics in Commercial Photography  3
Semester Prerequisite: Departmental Approval (Approved Photo Credits)
Exposes students to photography for commercial use. Students will explore vari-
able levels, techniques, methodologies, principles, and opinions as applied to com-
mercial photography. Designed to sharpen students' technical and aesthetic knowledge and skills in order to better compete in the commercial photographic market. (F, Sp, Su)

IMAG 202  Topics in Photographic Communication  3
Semester Prerequisite: IMAG 114, IMAG 117, Departmental Approval
(Approved Photo Credits)
Designed for intermediate and advanced students to enhance their competencies and explore areas of interest using still photography in combination with words. Emphasis on communicating clear messages to mass media audiences through documentary photography, newspaper and magazine photojournalism, and public relations photography. (F, Sp, Su)

IMAG 203  Topics in Film/Multimedia  3
Semester Prerequisite: Departmental Approval (Approved Photo Credits)
Provides students with basic photographic skills, an opportunity for intensive study in selected aspects of motion picture production, or multimedia production. (F, Sp, Su)

IMAG 204  Topics in Imaging for Self-Expression  3
Semester Prerequisite: IMAG 117/IMAG 118, Departmental Approval
(Approved Photo Credits)
An exploration of self-expression through various imaging technology-based tools, processes, and thought. Students will create process-based images and will research, discuss, critique, formulate opinions, and establish personal goals in order to better understand and practice personal style and expression. (F, Sp, Su)
IMAG 205 Topics in Hybrid Imaging 3
Semester Prerequisite: ARTS 171, Departmental Approval (Approval Photo Credits)
Designed for intermediate and advanced students to enhance their competencies and explore the areas of emerging hybrid imaging tools and techniques. (F, Sp, Su)

IMAG 206 End Technologies 3
Semester Prerequisite: IMAG 171/IMAG 118, Departmental Approval
Designed for intermediate and advanced students to enhance their competencies and knowledge in the area of currently available image input output technologies. (F, Sp, Su)

IMAG 207 Imaging Issues 3
Semester Prerequisite: IMAG 171/IMAG 118, Departmental Approval
An exploration of historical, ethical, and aesthetic issues relating to imaging technology. Intended to help students better understand, appreciate, and make aesthetic judgments about historical, contemporary, and future imaging technology issues. (F, Sp, Su)

IMAG 208 Input Processes 3
Semester Prerequisite: IMAG 171/IMAG 118, Departmental Approval
Designed for intermediate and advanced students to enhance their competencies and knowledge in the areas of currently available image input and creation technologies. (F, Sp, Su)

IMAG 220 Intermediate Still Imaging Technology 4
Semester Prerequisite: IMAG 114, IMAG 115, IMAG 117, Departmental Approval
Introduces the still imaging student to large format and medium format imaging technologies and their diverse applications. Students will work in areas directly linked to the technical and expressive elements of these formats. Camera applications will include commercial illustration, fine art, and portrait techniques. (F, Sp)

IMAG 221 Advanced Still Imaging Technology 4
Semester Prerequisite: IMAG 220, Departmental Approval
Introduces students to techniques and precepts of photojournalism, documentary photography, and public relations photography. Historical and contemporary photographic styles that reflect the program's areas of emphasis will be examined. Students will apply critical thinking processes and imaging technologies to produce a portfolio of work illustrating their areas of special interest. (F, Sp)

IMAG 222 Intermediate Color Applications and Technology 3
Semester Prerequisite: IMAG 114, IMAG 115, IMAG 117, Departmental Approval
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, Sp, Su)

IMAG 223 Advanced Color Applications and Technology 4
Semester Prerequisite: IMAG 222, Departmental Approval
A continuation of IMAG 222 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. (F, Sp)

IMAG 224 Emerging Image Technologies I 2
Semester Prerequisite: IMAG 121, IMAG 117/IMAG 118, Departmental Approval
An advanced-level course designed to expose imaging technology majors to the latest technological innovations affecting the areas of photography, imaging, and related fields. Course format will include lectures, discussion, demonstration, and hands-on experiences. (F, Sp)

IMAG 225 Emerging Image Technologies II 2
Semester Prerequisite: Departmental Approval
An advanced-level study that further explores the effects of new technologies and processes on the areas of photography and imaging. (F, Sp)

IMAG 226 Film Production II 4
Semester Prerequisite: IMAG 118
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 scriptwriting, storyboarding, production planning, photography, animation, editing, and sound track production. (F, Sp)

IMAG 227 Film Production III 4
Semester Prerequisite: IMAG 226
A continuation of IMAG 226 for moving image majors. Hands-on production exercises help the student develop skills in scriptwriting, storyboarding, production planning, photography, animation, editing, and sound track production. Students work individually and as group members and apply critical thinking and problem-solving processes to produce creative, dramatic, and effective communications programs. (F, Sp)

IMAG 228 Independent Study 3
Semester Prerequisite: IMAG 221/IMAG 227, Departmental Approval
Allows advanced students to pursue study in areas not normally taught within the curriculum. Students will work in consultation with an instructor. Acceptable written proposal required prior to registration. (F, Sp, Su)

IMAG 229 Advanced Imaging Applications 1
Semester Prerequisite: IMAG 221/IMAG 227, Departmental Approval
Allows advanced students to work on improving skills in 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 230 Imaging Technology Major I 3
Semester Prerequisite: IMAG 221, IMAG 223, IMAG 224Y (IMAG 224)
Departmental Approval
An advanced-level major concentration course, the first of a two-course sequence. Students will create images that are professionally acceptable visual solutions to problems typical of their chosen field. Emphasis is on critical thinking, problem solving, and relating technical, aesthetic, and communication skills. (F)

IMAG 231 Imaging Technology Major II 3
Semester Prerequisite: IMAG 230, Departmental Approval
A continuation of IMAG 230. Continued emphasis on problem solving, critical thinking, and relating technical, aesthetic, and communication skills. Students will create professional quality images that may be included in the portfolio which is required for completion of the Imaging Technology Program. (Sp)

IMAG 232 Internship 3
Semester Prerequisite: IMAG 221/IMAG 227, Departmental Approval
Allows advanced students to work at an intern developing competencies in the technical, business, creative, and communicative aspects of photography, filmmaking, or electronic imaging. Acceptable written application and internship agreement required prior to registration. (F, Sp, Su)

IMAG 233 The Business of Photography: Practices and Directions 3
Semester Prerequisite: IMAG 224, Departmental Approval
Exposes the student to the general business practices and approaches used in the photographic marketplace. The student will learn to undertake market research, develop a marketing plan, understand and apply basic accounting and tax principles, prepare a business plan, and determine where their specialties and interests fit within the industry. (F, Sp)

IMAG 234 Portfolio Assembly and Degree Completion Activities 3
Semester Prerequisite: Portfolio Review, Departmental Approval
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 238 Project Lab for Independent Study 3
Semester Prerequisite: IMAG 221/IMAG 227, Departmental Approval
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 240 Internship 4
Semester Prerequisite: IMAG 221/IMAG 227, Departmental Approval
Allows advanced students to work as interns developing competencies in the technical, business, creative, and communicative aspects of photography, filmmaking, or electronic imaging. Acceptable written application and internship agreement required prior to registration. (F, Sp, Su)

LANSING COMMUNITY COLLEGE 1997-98
INAU 100 - INTR 230

INAU - INDUSTRIAL AUTOMATION

INAU 100 Introduction to Industrial Automation 4
Semester 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)

INAU 101 Introduction to Industrial Computers 1
Semester Prerequisite: Departmental Approval
This course provides a hands-on introduction to current computer technology. Students will be introduced to the MS/PC DOS computer including word processor, spreadsheet, and database management. This course is restricted to appren-
tices only. (F, Sp)

INAU 200 Applied Automation 4
Semester Prerequisite: ELTE 122
Provides experience in the operation, programming, and set up of automated industrial equipment including robots, vision equipment, and industrial software. (F)

INSU - INSURANCE

INSU 121 Property and Liability Insurance Principles 3
Semester Prerequisite: None
This course will cover the basic principles of insurance, an introduction to insurance contracts, and an overview of the nature and operation of the insurance business. (F)

INSU 122 Personal Insurance 3
Semester Prerequisite: INSU 121
This course will cover the basic personal loss exposures and how they can be met through insurance such as automobile, homeowner, life, health, and others. It will also discuss governmental insurance for personal loss and how personal insurance affects society. (F, Sp)

INSU 123 Commercial Insurance 3
Semester Prerequisite: INSU 121
This course will cover all major forms of commercial liability and property insurance. In addition to covering standard property and casualty forms, the course will also include boiler and machinery, farm, ocean marine, surety and spoil, and surplus lines coverage. (F, Sp)

INSU 265 Principles of Risk and Insurance 3
Semester 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. (F, Sp)

INTR - INTERIOR DESIGN

INTR 106 Interior Design Graphic Standards 3
Semester Prerequisite: None
This course covers theory and application of graphics for designers, with an emphasis on architectural lettering. Drafting equipment, media, reproduction methods, lines, small scale freehand pencil lettering, sketching, signage, and an introduction to lettering with computers are also included. (F, Sp)

INTR 110 Applied Design, Two-Dimensional and Color 3
Semester Prerequisite: None
This is a studio course in basic design theory. Includes basic principles and elements of color theory and application, and two-dimensional (2-D) and three-dimensional (3-D) design fundamentals as they relate to interior design. (F, Sp)

INTR 132 Design Presentation Techniques 3
Semester Prerequisite: INTR 106/Equivalent
This course is the study of visual and verbal presentation techniques. Students create perspective drawings and color renderings. The emphasis will be on production presentation boards. (Sp)

INTR 140 Interior Drafting and Detailing 3
Semester Prerequisite: INTR 106/Equivalent
Students will learn drafting techniques for interior design including floor plans, elevations, sections, axonometrics, cabinetry, and furniture detailing. Emphasis on developing residential construction documents. (F)

INTR 151 Computer-Aided Kitchen Design 3
Semester Prerequisite: INTR 140/Equivalent
This course is an in-depth study of kitchen planning, design, and remodeling through computer software applications. Lecture/Lab. (Sp)

INTR 152 Kitchen Workshop 5
Semester Prerequisite: None
Basic awareness of kitchen and planning, designing, and remodeling developed through lecture, discussion, and recitation. (F, Sp, Su)

INTR 156 Interior Decorating for the Home 2
Semester Prerequisite: None
This course is a survey of interior decorations on a practical level. Emphasis is on residential furnishing and treatments. Field trips to local market resources for furniture, fixtures, furnishings, and finishes are included. (F, Sp, Su)

INTR 170 Introduction to Interiors 3
Semester Prerequisite: None
This course is a survey of the profession of interior design. Human needs are the focus of studio problems. Principles and elements of design are used to evaluate solutions to environmental design problems. Lecture/Lab. (F)

INTR 175 Space Planning and Design Process 3
Semester Prerequisite: INTR 170/Concurrently/Equivalent
This course is a study of the theory and application of interior design. Emphasis is on developing the creative problem-solving process through programming and space planning methodology using graphic written and verbal presentation. Lecture/Lab. (Sp)

INTR 185 Introduction to Textiles 3
Semester Prerequisite: INTR 170/Equivalent
This course examines the basic fundamentals of textiles including their characteristics and identification. Fabric weaves and uses, basic fiber weaves, currently used complex weaves, natural fibers, and man-made fibers are discussed and studied. (F)

INTR 190 Materials for Interiors 3
Semester Prerequisite: INTR 170, INTR 140/Concurrently/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)

INTR 201 Cultural Diversity in the Built Environment 3
Semester Prerequisite: None
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. (F)

INTR 222 Computer-Aided Drafting and Design for Interiors 3
Semester Prerequisite: TECH 130/CNCP 101 Recommended, INTR 140/Equivalent
This course offers computer-aided planning and design using AutoCAD software. Emphasis on contract furniture systems and space planning. (F, Sp)

INTR 225 Computer-Aided Design for Space Planning 3
Semester Prerequisite: INTR 222, INTR 132/Equivalent
This course is designed to further develop skills acquired in the preceding CAD course. Students will learn AutoCAD commands, AutoCAD routines, and other CAD presentation applications. (Sp, Su)

INTR 230 World Decorative Arts 3
Semester Prerequisite: INTR 110/INTR 132
This course is a survey of the history of decorative art periods, including furniture, interior textiles, and accessories. Covers periods from ancient up to the 19th century industrial revolution. (F)
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Semester Prerequisite</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTR 231</td>
<td>Interior Design Period Research</td>
<td></td>
<td>This course is a study of the history of the decorative art periods including furniture, interior textiles, and accessories, covering periods for the 19th century industrial revolution to post-modern periods with an examination of preservation principles. (F)</td>
</tr>
<tr>
<td>INTR 232</td>
<td>20th Century Interior Design</td>
<td>INTR 110/INTR 132</td>
<td>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 1960s. Student projects will include a colored sketchbook. (Sp)</td>
</tr>
<tr>
<td>INTR 240</td>
<td>Interior Lighting</td>
<td>INTR 132, INTR 140, INTR 170</td>
<td>This course introduces color and light as a design element for residential and commercial applications, creating reflective ceiling plans and power plans, and preparing calculations for lighting needs. (F)</td>
</tr>
<tr>
<td>INTR 241</td>
<td>Service Learning</td>
<td></td>
<td>This course allows students to participate in community service/volunteer projects, which includes outdoor education and all forms of hands-on active learning, such as building and remodeling houses with nonprofit organizations. (Su)</td>
</tr>
<tr>
<td>INTR 244</td>
<td>Three-Dimensional Visual Display</td>
<td>INTR 110, INTR 140, INTR 170</td>
<td>This course covers the development of display fundamentals in color, lighting, design, and materials for store windows, showrooms, and exhibits. (F)</td>
</tr>
<tr>
<td>INTR 245</td>
<td>Residential Interiors</td>
<td>INTR 240, INTR 190</td>
<td>This course examines the relationship of human needs to interior environmental design with emphasis on alternative housing design. (Sp)</td>
</tr>
<tr>
<td>INTR 246</td>
<td>Non-Residential Interiors, System Furniture</td>
<td>INTR 175, INTR 240</td>
<td>This course is a study of contract and commercial design. It includes designing all types of NONRESIDENTIAL interiors, programming, problem solving, furniture, fixtures and equipment, lighting, building codes, and barrier-free space planning. (F)</td>
</tr>
<tr>
<td>INTR 252</td>
<td>Construction Documents and Specifications</td>
<td>INTR 190, INTR 248</td>
<td>This course is the study of procedures and practices of working drawings, interior materials, cost estimating, installation methods for furniture, cabinets, floor coverings, wall coverings, and window treatments. Emphasis on commercial specifications. (Sp)</td>
</tr>
<tr>
<td>INTR 254</td>
<td>Interior Design Certification Review</td>
<td></td>
<td>This course is an independent 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. For the final project, students prepare a project control book. (F)</td>
</tr>
<tr>
<td>INTR 258</td>
<td>Interior Design Project Management</td>
<td></td>
<td>This course is a 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. For the final project, students prepare a project control book. (F)</td>
</tr>
<tr>
<td>INTR 259</td>
<td>Interior Design Workroom Practices</td>
<td>INTR 190</td>
<td>This course is a 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. For the final project, students prepare a project control book. (F)</td>
</tr>
<tr>
<td>INTR 260</td>
<td>Three-Dimensional CAD Design for Interiors</td>
<td>INTR 225/Equivalent</td>
<td>This course is a study of the basics of CAD applications for interior design. Students will learn how to create 3-D models, wireframes, and surfaces. (F, Sp, Su)</td>
</tr>
<tr>
<td>INTR 261</td>
<td>Design Project Laboratory</td>
<td></td>
<td>This course is a directed study of special projects not incorporated in regular course offerings. (F, Sp, Su)</td>
</tr>
<tr>
<td>INTR 262</td>
<td>Design Project Laboratory</td>
<td></td>
<td>This course is a directed study of special projects not incorporated in regular course offerings. (F, Sp, Su)</td>
</tr>
<tr>
<td>INTR 263</td>
<td>Internship</td>
<td></td>
<td>This course is a field study. Students will gain pre-career experience by working in a studio environment under the supervision of a professional architect or interior designer. Regular scheduled progress reports will be given and discussed with supervising faculty member. (Su)</td>
</tr>
<tr>
<td>INTR 270</td>
<td>Design Portfolio</td>
<td></td>
<td>The portfolio course is an opportunity for students to organize photographs, multimedia, and display their visual work. At the completion of the course the students will have developed a portfolio for a portfolio. (Sp)</td>
</tr>
</tbody>
</table>

**INTR - RADIATION THERAPY TECHNOLOGY**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Semester Prerequisite</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTR 105</td>
<td>Introduction Radiation Therapy</td>
<td></td>
<td>Provides the student with an overview of radiation therapy and its role in medicine. Student responsibilities and benefits will be outlined. Students will be oriented to academic and administrative structure, key departments and personnel, and to the profession as a whole. (F)</td>
</tr>
<tr>
<td>INTR 106</td>
<td>Oncology Principles Patient Care</td>
<td></td>
<td>Provides the student with an overview of radiation therapy and its role in medicine. Student responsibilities and benefits will be outlined. Students will be oriented to academic and administrative structure, key departments and personnel, and to the profession as a whole. (F)</td>
</tr>
<tr>
<td>INTR 204</td>
<td>Principles of Oncology I</td>
<td></td>
<td>Provides the student with an overview of radiation therapy and its role in medicine. Student responsibilities and benefits will be outlined. Students will be oriented to academic and administrative structure, key departments and personnel, and to the profession as a whole. (F)</td>
</tr>
<tr>
<td>INTR 205</td>
<td>Principles of Oncology II</td>
<td></td>
<td>Provides the student with an overview of radiation therapy and its role in medicine. Student responsibilities and benefits will be outlined. Students will be oriented to academic and administrative structure, key departments and personnel, and to the profession as a whole. (F)</td>
</tr>
<tr>
<td>INTR 220</td>
<td>Clinical Radiation Oncology</td>
<td></td>
<td>Provides the student with an overview of radiation therapy and its role in medicine. Student responsibilities and benefits will be outlined. Students will be oriented to academic and administrative structure, key departments and personnel, and to the profession as a whole. (F)</td>
</tr>
<tr>
<td>INTR 231</td>
<td>Radiation Therapy Physics</td>
<td></td>
<td>Provides the student with an overview of radiation therapy and its role in medicine. Student responsibilities and benefits will be outlined. Students will be oriented to academic and administrative structure, key departments and personnel, and to the profession as a whole. (F)</td>
</tr>
<tr>
<td>INTR 232</td>
<td>Advanced Therapy Physics</td>
<td></td>
<td>Provides the student with an overview of radiation therapy and its role in medicine. Student responsibilities and benefits will be outlined. Students will be oriented to academic and administrative structure, key departments and personnel, and to the profession as a whole. (F)</td>
</tr>
<tr>
<td>Course Code</td>
<td>Course Title</td>
<td>Semester</td>
<td>Prerequisites</td>
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</tr>
<tr>
<td>IRAD 234</td>
<td>Quality Assurance in Radiation Therapy</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>IRAD 235</td>
<td>Basic Dosimetry</td>
<td>3</td>
<td>MATH 121/Placement Test</td>
</tr>
<tr>
<td>IRAD 270</td>
<td>Radiobiology</td>
<td>2</td>
<td>Admission to Program</td>
</tr>
<tr>
<td>IRAD 285</td>
<td>Clinical Experience I</td>
<td>3</td>
<td>Admission to Program</td>
</tr>
<tr>
<td>IRAD 286</td>
<td>Clinical Experience II</td>
<td>9</td>
<td>IRAD 285</td>
</tr>
<tr>
<td>IRAD 287</td>
<td>Clinical Experience III</td>
<td>7</td>
<td>IRAD 286</td>
</tr>
<tr>
<td>IRAD 288</td>
<td>Clinical Experience IV</td>
<td>6</td>
<td>IRAD 287</td>
</tr>
<tr>
<td>IRAD 289</td>
<td>Clinical Experience V</td>
<td>8</td>
<td>IRAD 288/Admission to Program</td>
</tr>
<tr>
<td>IRAD 290</td>
<td>Advanced Clinical Skills</td>
<td>7</td>
<td>IRAD 291/Admission to Program</td>
</tr>
<tr>
<td>IRXT 100</td>
<td>Introduction to Imaging</td>
<td>4</td>
<td>Admission to Program</td>
</tr>
<tr>
<td>IRXT 111</td>
<td>Radiographic Positioning I</td>
<td>5</td>
<td>Admission to Program</td>
</tr>
<tr>
<td>IRXT 112</td>
<td>Radiographic Positioning II</td>
<td>4</td>
<td>IRXT 100, IRXT 111, 2.5 Minimum in AHCC 104</td>
</tr>
<tr>
<td>IRXT 113</td>
<td>Special Procedures</td>
<td>1</td>
<td>2.5 Minimum in IRXT 112</td>
</tr>
<tr>
<td>IRXT 114</td>
<td>Cross-Sectional Anatomy</td>
<td>3</td>
<td>IRXT 113/Departmental Approval</td>
</tr>
<tr>
<td>IRXT 121</td>
<td>Radiographic Exposure</td>
<td>5</td>
<td>Admission to Program</td>
</tr>
<tr>
<td>IRXT 131</td>
<td>Radiologic Physics</td>
<td>3</td>
<td>MATH 112/Equivalent</td>
</tr>
<tr>
<td>IRXT 132</td>
<td>Radiobiology and Protection</td>
<td>2</td>
<td>IRXT 131/Departmental Approval</td>
</tr>
<tr>
<td>IRXT 200</td>
<td>Introduction to Radiologic Pathology</td>
<td>2</td>
<td>AHCC 100</td>
</tr>
<tr>
<td>IRXT 210</td>
<td>Radiographic Department Management</td>
<td>1</td>
<td>Admission to Program</td>
</tr>
<tr>
<td>IRXT 212</td>
<td>Clinical Practice I</td>
<td>5</td>
<td>IRXT 100, IRXT 111, IRXT 121, AHCC 104</td>
</tr>
</tbody>
</table>
IRXT 213 - Clinical Practice II 6
Semester Prerequisites: IRXT 212
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. (F, S, Su)

IRXT 214 - Comprehensive Experience I 8
Semester Prerequisites: IRXT 213
First in a three-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. (F, S, Su)

IRXT 215 - Comprehensive Experience II 8
Semester Prerequisites: IRXT 214
Second in a three-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. (F, S, Su)

IRXT 216 - Comprehensive Experience III 9
Semester Prerequisites: IRXT 215
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, S, Su)

IRXT 219 - Imaging Update 1
Semester Prerequisites: Allied Health Professional
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. (F, S, Su)

IRXT 232 - Clinical Practice I-S 3
Semester Prerequisites: IRXT 111
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. (S, Su)

IRXT 233 - Clinical Practice II-S 3
Semester Prerequisites: IRXT 212/IRXT 232
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. (S, Su)

IRXT 235 - Comprehensive Experience I-S 5
Semester Prerequisites: IRXT 214
Second in a three-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. (S, Su)

IRXT 238 - Comprehensive Experience III-S 5
Semester Prerequisites: IRXT 215/IRXT 235
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. (S, Su)

ISCI 121 - Integrated Science for Education I 4
Semester Prerequisites: 2.0 Minimum in ISCI 110/ Science Inventory Recommended
Basic Skills Prerequisites: Reading Level 5; Writing Level 4; Math Level 4
The first of two general science courses focusing on important scientific discoveries and revolutions in their cultural and historical environment. Science processes, methods, and reasoning skills are emphasized throughout. Recommended for education majors. (F, S, Su)

ISCI 122 - Integrated Science for Education II 4
Semester Prerequisites: 2.0 Minimum in ISCI 121
The second of two general science courses focusing on important scientific discoveries and revolutions in their cultural and historical environment. Science processes, methods, and reasoning skills are emphasized throughout. Recommended for education majors. (F, S, Su)

ISCI 131 - Integrated Science-Physical: The Science of the Water Planet 4
Semester Prerequisites: 2.0 Minimum in ISCI 110/ Science Inventory Recommended
Basic Skills Prerequisites: Reading Level 5; Writing Level 4; 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, S, Su)

ISCI 132 - Integrated Science-Biological: Life on the Water Planet 4
Semester Prerequisites: 2.0 Minimum in ISCI 131
This course builds upon ISCI 131. Topics include ecosystems, population dynamics, evolution and origins, plate tectonics, and human interactions with the earth as a sustainable system. Critical thinking and problem-solving skills are applied to environmental issues. Laboratory activities illustrate and amplify lecture topics. (F, S, Su)

JAPN 115 - Conversational Japanese I 3
Semester Prerequisites: 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, S, Su)

JAPN 116 - Conversational Japanese II 3
Semester Prerequisites: JAPN 115/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, S, Su)

JAPN 121 - Elementary Japanese I 4
Semester Prerequisites: None
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, S, Su)

JAPN 122 - Elementary Japanese II 4
Semester Prerequisites: JAPN 101/JAPN 121/Equivalent/Approval
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. (S, Sp)

JAPN 201 - Intermediate Japanese I 4
Semester Prerequisites: JAPN 102/JAPN 122/Equivalent/Approval
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
Semester Prerequisite: JAPN 201/Equivalent/Approval
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 Kag will be introduced. Natural and practical communication will be emphasized. Class is taught in Japanese. (Sp)

JRN 151 Journalism
Semester Prerequisite: None
Introduction to, and practice in, writing news stories. Students learn news terminology, style, objectivity, attribution, accuracy, and copyrighting skills. Basic news gathering and reporting tactics are practiced and presented. (F)

JRN 254 Editorial Writing
Semester Prerequisite: JRN 151/Departmental Approval
A course in how to write effective editorials. Students analyze content, structure and style of editorial modes, learn methods of finding subjects, learn methods of research, and write editorials and articles on important issues. (F)

LABR - LABOR RELATIONS

LABR 200 Introduction to Labor Relations
Semester 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, Su)

LABR 201 Collective Bargaining
Semester Prerequisite: LABR 200/Departmental Approval
This course studies the collective bargaining process, the administration of collective bargaining agreements, and wage-benefit issues of employment. (F)

LABR 202 Grievances and Arbitration
Semester Prerequisite: LABR 200/Departmental Approval
Grievance procedure, including employee discharge and discipline, is examined in-depth with a review of pertinent legislation. This "how to" course introduces the basic knowledge and skills necessary for grievance handling and understanding the fundamentals of contract language. (Sp)

LABR 203 Labor Law
Semester Prerequisite: LABR 200/Departmental Approval
An in-depth study of traditional labor law including NLRA 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
Semester 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 Introduction to Landscape Drafting
Semester 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 104 Landscape Lecture Series
Semester Prerequisite: None
This course is the study of the many facets in the fields of landscape architecture and horticulture. (F, Sp)

LAND 120 Principles of Landscape Contracting
Semester Prerequisite: None
This course will explore the field of landscape contracting and its relationships to landscape architecture and management. Landscape contractors and their role in developing a business plan, selecting and managing plant materials, and their installation and construction features will be fully analyzed. The role of the individual in the design/build industry will be highlighted. (F, Sp)

LAND 130 Interior Landscaping
Semester Prerequisite: None
This course includes the identification, culture, placement, and use of foliage and flowering plants in the office, hotel, retail store, 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
Semester 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, deck, patio, water features, and other landscape elements will be demonstrated. A course for the new homeowner, homeowner renovating his or her landscape, or nursery person. (F, Sp, Su)

LAND 133 Residential Landscape Maintenance
Semester 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
Semester Prerequisite: None
This course emphasizes identification of both common and uncommon deciduous trees, shrubs, overgrown 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, Ground Covers
Semester 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, foliage, and flowers are discussed as well as cultural requirements of these plants. (Sp, Su)

LAND 142 Perennial and Annual Flowering Plants
Semester Prerequisite: None
This course covers the identification and basic culture of approximately 150 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. (F, Sp)

LAND 145 Field Experience in Landscape Architecture
Semester 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, Su)

LAND 150 Principles of Landscape Architecture
Semester Prerequisite: None
This course 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 Communications-Beginning
Semester Prerequisite: LAND 150/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, Su)
LAND 153 Landscape Graphics Communications-Advanced 3
Semester Prerequisite: LAND 152
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 renderings. (Sp)

LAND 160 Planting Design I 3
Semester Prerequisite: LAND 140, LAND 141, LAND 150
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 site selection and design implementation in a range of design situations. Contemporary issues concerning today’s landscape and construction industries are also discussed. (F)

LAND 161 Planting Design II 3
Semester Prerequisite: LAND 140, LAND 141, LAND 160
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 Garden 3
Semester Prerequisite: LAND 100, LAND 140, LAND 142
This course is a practical approach to designing the herbaceous garden. Annuals, perennials, herbs, and ornamental grasses are analyzed to design a garden that be in harmony with its environment. Color, form, texture, and fragrance are some of the plant characteristics which will be discussed. (F, Sp)

LAND 164 Site Design 3
Semester Prerequisite: LAND 190, LAND 162
This course emphasizes the use of the design process to solve a variety of urban and nonurban site planning problems. Project design solutions require preliminary exploration of the available information and site planning processes are explored. A variety of drawing scales, graphic materials, and techniques will be explored. (F)

LAND 170 Site Grading I 3
Semester Prerequisite: LAND 150
This course focuses on the planning principles and methods of grading. Use of contour lines, land form interpretation, and earthwork computations are studied and applied to problem solving for both typical and special requirements. (F)

LAND 171 Site Grading II 3
Semester Prerequisite: LAND 170
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 erosion control and recreational and utility facilities. (Sp)

LAND 172 Site Layout 3
Semester Prerequisite: LAND 171
This course covers plan dimensioning and layout techniques for vehicle and pedestrian circulation systems, building locations, utilities, and parking and recreational facilities. Professional graphic techniques are emphasized. (Sp)

LAND 180 Landscape Ecology 3
Semester Prerequisite: None
This course is for the professional as well as the interested individual covering the relatively new field of landscape ecology. Fundamental 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, Sp)

LAND 181 Landscape Restoration and Management 3
Semester Prerequisite: None
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 and Evaluation 2
Semester 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. (F, Sp)

LAND 183 Planned Wetlands Evaluation and Restoration 2
Semester Prerequisite: None
This course will discuss goals which are desirable for designing planned wetlands. Restoration, designed or enhanced with specific targeted functions in mind. The class will focus on assessment of wetlands during the design process and tools available to accomplish this. Wetland design, evaluation, and management will also be discussed. (F, Sp)

LAND 185 Arboriculture (Urban Forestry) 3
Semester Prerequisite: None
The care of trees and shrubs in the urban environment is thoroughly discussed. The course emphasizes tree physiology as it relates to plant selection, installation, decay prevention, pruning, and fertilizing. Field demonstrations of arboricultural practices such as pruning, bracing, and fertilizing will be offered. (F, Sp)

LAND 195 Irrigation Design and Management 3
Semester Prerequisite: None
This course is for the professional or beginner interested in irrigation system design, installation, maintenance, and troubleshooting. Lectures will cover a range of systems including residential, commercial, dairy, and golf course. (Sp)

LAND 220 Wetland Restoration 3
Semester 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, Sp, Su)

LAND 222 Landscape Construction Techniques Beginning 3
Semester Prerequisite: LAND 120/Equivalent
This course will deal with the basic concepts needed to operate as a landscape contractor in the design/build industry. 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, Sp)

LAND 225 Landscape Cost Estimation 3
Semester Prerequisite: LAND 150/Equivalent
This course is an introduction to the study of landscape contracting and the cost estimating process. This class covers the project management process and the cost estimating factors associated with the area. Areas of material costs, equipment cost, labor costs, and related management changes will be evaluated. The preparation of bids and the bidding process will be highlighted. (F, Sp)

LAND 232 Professional Residential Landscape Design 3
Semester Prerequisite: LAND 100/Equivalent
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, Su)

LAND 233 Grounds Management 3
Semester Prerequisite: LAND 232
This course will introduce the student to the land planning process. The ecological method of land planning will be emphasized with projects demonstrating. Field trips to planning meetings and project sites will be an integral part of this course. (F, Sp)

LAND 242 Ecological Land Planning 3
Semester Prerequisite: None
This course will introduce the student to the land planning process. The ecological method of land planning will be emphasized with projects demonstrating. Field trips to planning meetings and project sites will be an integral part of this course. (F, Sp)

LAND 250 Landscape Construction Methods 3
Semester Prerequisite: MATH 050, LAND 150
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
Semester Prerequisite: LAND 250
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 Specifications  2
Semester Prerequisite: LAND 250
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 277  Landscape Office Practice  3
Semester Prerequisite: None
Introduces the elements of office business practice and organization, record keeping, on-the-job inspection, close out, initial proposal writing, and contract formulation. (F)

LAND 282  Microcomputers in Landscape Planning  3
Semester 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 LandCAD  3
Semester Prerequisite: LAND 283/CAD Experience
This course assumes basic AutoCAD experience and covers the Site Design LandCAD 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, Su)

LAND 284  LandCAD Advanced  3
Semester Prerequisite: LAND 283
This course continues the use of LandCAD 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 LandCAD class. (Sp)

LAND 285  Microcomputer Animation  3
Semester Prerequisite: LAND 282/Departmental Approval
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  LandCAD: Photo Imaging  3
Semester Prerequisite: 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. (F, Sp)

LAND 288  Beginning Site Designer  3
Semester 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, Su)

LAND 289  Landscape Architecture Computer Design Studio  3
Semester Prerequisite: LAND 282/Equivalent
This course involves the use of computer animation presentation software in the three-dimensional arena. Various 3-D presentation software will be utilized to create graphic animations and presentations. (F, Sp)

LAND 290  Exploring the World of Computers  1
Semester Prerequisite: None
This course will familiarize the green industry professional with an overview of available hardware and software systems and the configurations for a landscape or nursery operation. There will be experimentation with different software packages, such as LandCAD, CAPS, LAND DesignWare, and JACXPCOM as well as related landscape design, site planning, management scheduling, and cost estimating areas. (F, Sp)

LAND 295  Landscape Independent Study  4
Semester Prerequisite: Instructor Approval
The independent study 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)

LAND 296  Landscape Project Lab  2
Semester Prerequisite: Instructor Approval
The independent study 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)

LAND 297  Landscape Project Lab  3
Semester Prerequisite: Instructor Approval
The independent study 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)

LAND 298  Pesticide Applicator Certification  2
Semester Prerequisite: None
The purpose of this course is to prepare the student for certification as a commercial applicator of pesticides for turfgrass and ornamental plants. Under the Michigan Pesticide Control Act, individuals applying pesticides for hire must be certified or be supervised by a certified applicator. Course topics include IPM techniques, turfgrass and ornamental pest identification, and proper pesticide handling and application. (F, Sp)

LAND 299  LandCAD Training  2
Semester Prerequisite: Approval Required
A program for the individual with basic computer and AutoCAD exposure interested in learning more about computer-aided design using the LandCAD software package. The LandCAD site planning package will be explained fully along with some additional modules like E-Z estimate (cost estimating) package, plant materials data base, and simulated plant growth as well as quadrangles (land form). (F, Sp, Su)

LEGAL - LEGAL ASSISTANT/LEGAL

LEG 115  Legal Assistant Career and Ethics  3
Semester Prerequisite: Departmental Approval
Basic Skills Prerequisite: Reading Level 7; 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)

LEG 120  Legal Research I  3
Semester Prerequisite: 2.0 Minimum in LEG 115, LEG 215
Introduces research procedures and resources for finding federal and Michigan law, using digests, encyclopedias, reporters, statutes, court rules, treatises, administrative publications, citator, 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 locations. (F, Sp)

LEG 121  Legal Writing I  3
Semester Prerequisite: WRIT 122
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 160 Critical Thinking in Law 3
Semester Prerequisite: None
This course strongly emphasizes the "team by doing" approach, specifically by utilizing group dynamics. The panorama of thinking skills, particularly those relevant in both 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, Su)

LEGL 210 Litigation Procedures 4
Semester Prerequisite: 2.0 Minimum in LEGL 115, LEGL 215
Provides in-depth study of pre-trial, trial, and post-trial practices 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)

LEGL 211 Tort Law 2
Semester Prerequisite: 2.0 Minimum in LEGL 115, LEGL 215
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)

LEGL 215 Business Law I, Basic Principles 3
Semester Prerequisite: None
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 or via Computer Managed Learning (C.M.L.). (F, Sp, Su)

LEGL 216 Business Law II, Commercial Law 3
Semester Prerequisite: LEGL 215
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 Computer Managed Learning (C.M.L.). (F, Sp, Su)

LEGL 217 Business Law III, Business Organizations 3
Semester Prerequisite: LEGL 215
Introduces basic business organizations, including agency law, partnerships, sole proprietorships, and corporations. Additionally, the course covers the division of government regulation of business, real estate, wills, trusts, and estates. Taught in traditional classroom style or via Computer Managed Learning (C.M.L.). (F, Sp, Su)

LEGL 218 Litigation Specialties 3
Semester Prerequisite: LEGL 211
Covers several specialty areas of law, including 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 pleadings and other legal instruments. (F, Sp)

LEGL 219 Advanced Business Law for Accounting Majors 4
Semester Prerequisite: LEGL 215
Self-paced course intended for students majoring in accounting who have a goal of becoming a 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 Managed Learning (C.M.L.). (F, Sp)

LEGL 220 International Legal Issues and Organizations 3
Semester Prerequisite: LEGL 215
This self-paced course is intended for those students majoring in accounting who have a goal of becoming a 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 Managed Learning (C.M.L.). (F, Sp)

LEGL 221 Real Estate Transaction 3
Semester Prerequisite: LEGL 115, LEGL 215
Covers fundamental principles of real estate property law and introduces the student to the common terms 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, foreclosures, and landlord-tenant relationships. (F)

LEGL 222 Probate Law and Procedure 3
Semester Prerequisite: LEGL 115, LEGL 215
Probate process will be addressed in detail, from commencement of proceedings through closing the estate of a decedent. Other topics will include wills, trusts, guardianships, conservatorships, adoptions, and other probate court procedures. Emphasis is on the part played by the legal assistant in preparation of documents and other probate practice tasks. (Sp)

LEGL 223 Domestic Relations 3
Semester Prerequisite: LEGL 115, LEGL 215
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)

LEGL 224 Administrative Law 3
Semester Prerequisite: LEGL 115, LEGL 215
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. (Sp)

LEGL 225 Legal Research and Writing II 3
Semester Prerequisite: LEGL 120, LEGL 121
Reviews principles of legal research, analysis, and writing. Introduces student to computer-assisted legal research (LEXIS). Students 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, Su)

LEGL 226 Legal Interviewing and Investigation 3
Semester Prerequisite: LEGL 115, LEGL 215
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. (F, Sp)

LEGL 227 Bankruptcy and Collections 3
Semester Prerequisite: LEGL 115, LEGL 215
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 role played by the Bankruptcy Trustee. (Su)

LEGL 228 Computer Technology for Legal Assistants 3
Semester Prerequisite: CABS 102/CABS 114/CABS 121 (Equivalent)/LEGL 120
This course focuses on computer technology as it is applied within the law firm, 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, and checking conflicts of interest among clients. (F, Su)

LEGL 230 Introduction to Linguistics 3
Semester Prerequisite: None
Examines human language from the perspective of contemporary American linguistics: generative syntax, phonology, and morphology. Special attention to the structure of English, considerations of regional and social variation, and implications for teachers of language skills. (F, Sp, Su)
MACH 100 Manufacturing Processes
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 4, Writing Level 4, Math Level 3
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
Semester Prerequisite: MATH 050
Basic Skills Prerequisite: Math Level 4
Informs students of the main 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
Semester Prerequisite: MATH 050, MACH 105
Basic Skills Prerequisite: Math Level 4
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. Competency required to successfully complete this course is at the apprentice level. (F, Sp)

MACH 111 Machine Tool Technology II
Semester Prerequisite: 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
Semester Prerequisite: MACH 111
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. (F, Sp)

MACH 120 Effective Use of Machinery's Handbook
Semester Prerequisite: MATH 110/TECH 101
Basic Skills Prerequisite: Math Level 4
Machine'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
Semester Prerequisite: DTEG 100, MATH 050
Basic Skills Prerequisite: Math Level 4
This course will present 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 stripper, and an in-depth knowledge of how to repair and maintain the equipment common to the die industry. (F, Sp)

MACH 135 Metallurgy and Heat Treat
Semester 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
Semester Prerequisite: MACH 110
This course examines tooling used in mechanical material removal. Tooling materials from high-speed steel to diamond will be discussed and demonstrated. Tooling geometry, sharpening methods, speeds and feeds, failure mechanisms, and problem diagnosis will be addressed. Students will analyze tooling performance and write up technical reports. (F, Sp)

MACH 162 Machine Shop Seminar
Semester Prerequisite: None
This course may cover a variety of topics in the machine trades or related fields. For individuals already employed in the industrial environment seeking to upgrade their skills or anyone looking to be employed in a particular trade. (F, Sp, Su)

MACH 194 Machine Tool Technology Project Lab
Semester Prerequisite: MACH 120/Departmental Approval
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 Principles of Electric Discharge Machining (EDM)
Semester Prerequisite: CNCPR 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)

MASG 270 Massage Therapy - Beginning
Semester Prerequisite: None
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
Semester Prerequisite: HFWE 270/MASG 270
Following a review of HFWE 270/MASG 270 the student is introduced to specialized massage techniques. The student will learn contraindicated techniques and exploration of Swedish massage. (F, Sp, Su)

MASG 272 Human Structural Dynamics for Massage Therapy
Semester Prerequisite: Anatomy/Physiology Required
This course will provide the massage therapy student with an in-depth view of the areas of anatomy which are particular to massage, primarily within the musculoskeletal and nervous systems. (F, Sp)

MASG 274 Massage Laboratory Practicum
Semester Prerequisite: MASG 271/Concurrently
This course is designed for students who attend to complete the Massage Therapy Certificate of Completion curriculum. It will provide the student with supervised practice of massage techniques in basic massage, polarity therapy, and sports massage. Students must complete the requirements of this course within one year from the date of enrollment. (F, Sp)

MASG 275 Touch for Health I
Semester Prerequisite: None
This course introduces the student to the combination of ancient oriental disciplines with the modern practice of applied kinesiology. The student will learn basic muscle techniques to improve postural balance, which can affect the mental, emotional, and physical state. (F, Sp)

MASG 277 Polarity Therapy I
Semester Prerequisite: None
This course introduces the student to polarity therapy as a form of massage that balances the life energy of the physical body. Hands-on application of balancing techniques, basic theory, and philosophy are taught to enhance relaxation and awareness of energy flow in the body. (F, Sp)

MASG 278 Polarity Therapy II
Semester Prerequisite: HFWE 277/MASG 277
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 of the physical body. Lectures will be on the philosophic, energetic, and spiritual principles that sustain and vitalize the physical form. (F, Sp)

MASG 279 Business Applications for Massage Therapists
Semester Prerequisite: HFWE 270/MASG 270
This course introduces students to aspects of business and marketing in the field of massage and bodywork. Emphasis is placed on development of a professional and personal business sense and philosophy using planning and persistence, client-practitioner relationships and ethics, research, marketing strategy, goal-setting, motivation, and professional legalities. (F, Sp)
MATH 001 Math Minus Anxiety Workshop
Semester Prerequisite: None
A workshop for students who feel insecure about doing math and need help and encouragement to succeed in the math required for their goals. Materials and exercises are aimed at reducing math anxiety, improving math study skills, and practicing problem-solving techniques. Students at any level of math may enroll. (F, Sp)

MATH 005 Mathematics Laboratory
Semester Prerequisite: None
When registering for a math lab course, students must register for both a specific course and a MATH 005 section. The MATH 005 section determines the time and place of attendance in a mathematics laboratory. This time is used for studying, instructional help, and testing. (F, Sp, Su)

MATH 030 Fundamental Arithmetic Skills
Semester Prerequisite: Placement Test
Basic Skills Prerequisite: Reading Level 3; Writing Level 1; Math Level 1
The course focuses on arithmetic skills and practical applications with whole numbers, decimals, fractions, ratios, and proportions. It also includes percents, geometry, and measurement concepts. Work is done both with and without a calculator. Confidence building and study skills for success in mathematics are emphasized. (F, Sp, Su)

MATH 033 Arithmetic Skills
Semester Prerequisite: Placement Test
Basic Skills Prerequisite: Reading Level 3; Writing Level 1; Math Level 2
The course focuses on arithmetic skills and practical applications with whole numbers, decimals, fractions, ratios, and proportions. It also includes percents, geometry, and measurement concepts. Work is done both with and without a calculator. Confidence building and study skills for success in mathematics are emphasized. (F, Sp, Su)

MATH 050 Mathematics-Principles and Practices
Semester Prerequisite: 2.0 Minimum in MATH 030/MATH 033/Placement Test
Basic Skills Prerequisite: Reading Level 4; Writing Level 2; Math Level 3
This course reviews mathematical operations involving fractions and decimals. Topics include percents, ratios, proportions, U.S. and metric measurements, integers, statistical graphs, Pythagorean Theorem, formulas, and geometry involving perimeter, area, and volume. It also introduces algebraic concepts using simple expressions and equations. Problem solving, estimation, and reasoning skills are taught using applications. (F, Sp, Su)

MATH 103 Introductory Algebra, Part A
Semester Prerequisite: 2.0 Minimum in MATH 050/Placement Test
Basic Skills Prerequisite: Reading Level 4; Writing Level 3; Math Level 4
This course is the first half of Math 107. Topics include properties of real numbers, variable expressions, solving linear equations, ratio and proportion, graphing, solving systems of equations in two variables, and inequalities. Graphing calculator, relevant applications, and geometry are integrated throughout the course. (F, Sp, Su)

MATH 104 Introductory Algebra, Part B
Semester Prerequisite: 2.0 Minimum in MATH 103
Basic Skills Prerequisite: Reading Level 4; Writing Level 3; Math Level 4
This is the second half of Math 107. Topics include properties of exponents, polynomial operations, solving quadratic equations, factoring polynomials, rational expressions and equations, and radicals. Graphing calculator, relevant applications, and geometry are included throughout the course. (F, Sp, Su)

MATH 107 Introductory Algebra
Semester Prerequisite: 2.0 Minimum in MATH 050/Placement Test
Basic Skills Prerequisite: Reading Level 5; Writing Level 3; Math Level 4
Topics include properties of real numbers, properties of exponents, variable expressions, solving linear and quadratic equations, polynomial operations including factoring, graphing, solving systems of equations in two variables, rational expressions and equations, ratio and proportion, radicals, and inequalities. Graphing calculator, relevant applications, and geometry are integrated throughout the course. (F, Sp, Su)

MATH 112 Intermediate Algebra
Semester Prerequisite: 2.0 Minimum in MATH 104/MATH 107/Placement Test
Basic Skills Prerequisite: Reading Level 5; Writing Level 4; Math Level 5
Graphing calculator required. This is an extension of beginning algebra, using the graphing calculator, with emphasis on graphing and 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, logarithms, and matrices. (F, Sp, Su)

MATH 114 Technical Math I
Semester Prerequisite: MATH 050/Placement Test
Basic Skills Prerequisite: Reading Level 5
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, graphs, angles, triangles, Pythagorean Theorem, and right triangle trigonometry. Emphasis is placed on problem-solving techniques for technical applications. (F, Sp, Su)

MATH 115 Technical Math II
Semester Prerequisite: MATH 114/Proficiency Test
Basic Skills Prerequisite: Math Level 5
This course is a continuation of topics covered in MATH 114. Topics include congruent and similar triangles, properties of polygons and circles including angles, chords, and tangents, application of right and oblique triangles using the Pythagorean Theorem, laws of sines, laws of cosines, and law of cosines. Emphasis is placed on problem-solving techniques for technical applications. (F, Sp, Su)

MATH 116 Technical Math III
Semester Prerequisite: MATH 115
This course combines solid geometry and advanced (solar) trigonometry, enabling students to solve problems involving angles in industrial applications. Emphasis on application of actual tooling set ups for complex machining operations is used to make the course relate to real life situations. (F, Sp, Su)

MATH 117 Math for Business
Semester Prerequisite: 2.0 Minimum in MATH 104/MATH 107/Placement Test
Basic Skills Prerequisite: Reading Level 5; Writing Level 4; Math Level 5
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, Su)

MATH 121 College Algebra
Semester Prerequisite: 2.0 Minimum in MATH 112/Placement Test
Basic Skills Prerequisite: Reading Level 5; Writing Level 4; Math Level 6
First in two-course sequence. Graphing calculator required. Topics include functions, mathematical models, symmetry, absolute value, distance, solving equations algebraically and graphically, solving inequalities, linear functions, quadratic functions, geometric transformations, real and complex zeros, and rational, radical, exponential, and logarithmic functions. Degree credit may not be earned in both MATH 121-122 and MATH 126. (F, Sp, Su)

MATH 122 College Algebra II and Trigonometry
Semester Prerequisite: 2.0 Minimum in MATH 121/Placement Test
Basic Skills Prerequisite: Reading Level 5; Writing Level 4; Math Level 8
Second in a two-course sequence. Graphing calculator required. Topics include right triangle trigonometry, reference angles, graphing, identities, inverse trig functions, law of sines and cosines, bimodal theorem, systems of linear equations, vectors, sequences, mathematical induction, series, permutations, and combinations. Degree credit may not be earned in both MATH 121-122 and MATH 126. (F, Sp, Su)
MATH 126 - College Algebra and Trigonometry
5
Semester Prerequisite: 3.5 Minimum in MATH 112/Placement Test
Basic Skills Prerequisite: Math Level 7
This is a very intensive course which covers the same material as that in MATH 121 and 122. Topics include functions, absolute value, solving equations and inequalities, graphing, including functions, zeros, rational, radical, exponential, logarithmic and trigonometric functions, right triangle trigonometry, law of sines and cosines, DeMoivre's Theorem, binomial theorem, vectors, sequences, mathematical induction, and series. Degree credit may not be earned in both MATH 126 and MATH 121-122. (F, Sp)

MATH 130 Finite Mathematics
3
Semester Prerequisite: 2.0 Minimum in MATH 121/Placement Test
Basic Skills Prerequisite: Reading Level 5; Writing Level 4
This is an alternate course to MATH 122 for students whose programs do not require trigonometry. Topics studied include matrices, linear programming, permutations, combinations, probability, and random variables. In addition, students will solve applied problems by compiling required computer assignments. (F, Sp, Su)

MATH 141 Calculus with Applications
3
Semester Prerequisite: 2.0 Minimum in MATH 121/MATH 126/Placement Test
Basic Skills Prerequisite: Reading Level 5; Writing Level 4
This course is for students in business, economics, social science, life sciences, and other areas not requiring a rigorous study of calculus. Topics studied include limits, derivatives, and integrals with an emphasis on applications to the above-mentioned disciplines. (F, So, Su)

MATH 151 Calculus I
4
Semester Prerequisite: 2.0 Minimum in MATH 121/MATH 126/Placement Test
Basic Skills Prerequisite: Math Level 9
The first course in a three semester calculus sequence. Limits, continuity, derivatives of algebraic, trigonometric, and logarithmic functions are considered. Integration techniques and the fundamental theorems of calculus are introduced. Applications of the calculus to both physical and geometric problems are emphasized. (F, Sp, Su)

MATH 152 Calculus II
4
Semester Prerequisite: 2.0 Minimum in MATH 151
Applications of integration are emphasized along with the topics of sequences and infinite series. Also studied are exponential, trigonometric, inverse trigonometric, and logarithmic functions; improper integrals; L'Hôpital's rule; conic sections; and polar coordinates. (F, Sp, Su)

MATH 201 Math for Liberal Arts I
3
Semester Prerequisite: MATH 121
Basic Skills Prerequisite: Reading Level 5; Writing Level 6
Topics studied provide an understanding of what mathematics is. Topics include analysis and interpretation of data, application of functions, the real numbers, bases other than 10, r-gons, golden figures, and tiling. A strong historical theme is present throughout. The student is involved in concept development as well as in finding answers. (F, Sp, Su)

MATH 202 Math for Liberal Arts II
3
Semester Prerequisite: MATH 201
Topics studied provide an understanding of what mathematics is. Topics include number theory, logic, calculus, mathematical games, graph theory, trigonometry, and algorithmic reasoning. A strong historical theme is present throughout. The student is involved in concept development as well as in finding answers. (F, Sp, Su)

MATH 253 Calculus III
4
Semester Prerequisite: 2.0 Minimum in MATH 152
Multivariable calculus and vector analysis are studied. Vector algebra, curves and surfaces in 3-space, vector valued functions, partial derivatives, multiple integrals, line integrals, and physical applications of all of these topics are presented. (F, Sp, Su)

MATH 254 Introduction to Differential Equations
3
Semester Prerequisite: 2.0 Minimum in MATH 253
An introduction to the basic methods for solving ordinary differential equations, including 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
Semester Prerequisite: 2.0 Minimum in MATH 253
This introduction to linear algebra includes the study of systems of linear equations, matrix algebra, vector spaces, linear transformations, eigenvalues and eigenvectors, with applications. (F, Sp, Su)

MATH 281 Honors Math Seminar I
1
Semester Prerequisite: MATH 151, Departmental 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
Semester Prerequisite: MATH 151, Departmental Approval
Students may take this course after taking MATH 281. Students solve a set of challenging mathematics problem, different from those in MATH 281, which are not normally encountered in other classes. Creative and independent thinking is encouraged and developed. (Sp)

MATH 295 Independent Study in Mathematics
1
Semester Prerequisite: Departmental Approval
An independent study in some area of mathematics not covered by an existing course. Students work independently under the supervision of a faculty member. Students devote three or more hours per week to this study in addition to their work with the assigned instructor. (F, Sp, Su)

MATH 296 Independent Study in Mathematics
2
Semester Prerequisite: Departmental Approval
An independent study in some area of mathematics not covered by an existing course. Students work independently under the supervision of a faculty member. Students devote six or more hours per week to this study in addition to their work with the assigned instructor. (F, Sp, Su)

MATH 297 Independent Study in Mathematics
3
Semester Prerequisite: Departmental Approval
An independent study in some area of mathematics not covered by an existing course. Students work independently under the supervision of a faculty member. Students devote nine or more hours per week to this study in addition to their work with the assigned instructor. (F, Sp, Su)

MATH 298 Independent Study in Mathematics
4
Semester Prerequisite: Departmental Approval
An independent study in some area of mathematics not covered by an existing course. Students devote 12 or more hours per week to this study in addition to their work with the assigned instructor. (F, Sp, Su)

MDCS – MANAGEMENT DEVELOPMENT SEMINARS

MDCS 205 Sexual Harassment
.25
Semester Prerequisite: None
This seminar will increase participants' understanding of what is and what is not sexual harassment and how to handle a situation that involves sexual harassment whether subtle or blatant, whether against male or female. (F, Sp, Su)

MDCS 206 Valuing Cultural Diversity
.5
Semester Prerequisite: None
Participants acquire diversity-related information applicable to such situations as communication with conflict potential, self-awareness, and work group effectiveness. Participants define diversity, its impact on the workplace, analyze awareness of the sensitivity to diversity issues, identify difficulties of cross-cultural communications, and apply content to workplace situations. (F, Sp, Su)

MDCS 214 Stress Management
.5
Semester Prerequisite: None
This seminar will help participants prepare an individual stress management plan that can be applied to personal or work situations. Topics include uncovering stressors, assessing their impact, and altering coping techniques. (F, Sp, Su)

MDCS 226 Team Work Skills
1.5
Semester Prerequisite: None
Effective organizations make extensive use of teams, resulting in increased productivity, quality, and customer satisfaction. This 27-hour program is designed to give participants the skills necessary to build competent teams in their individual organizations. (F, Sp, Su)

MDCS 229 Effective Communication Skills
1
Semester Prerequisite: None
This two-day seminar covers the techniques of an effective presentation: planning, preparing, and presenting. This seminar culminates with participants giving a 10-minute presentation. Emphasis will be given to practicing and critiquing presentation skills. (F, Sp, Su)
MDCS 239 - Training-Trainer
Semester Prerequisite: None
The new and seasoned trainer can use this seminar to rethink training strategies and to sharpen skills in developing and facilitating training activities. The emphasis in this seminar is on the practical strategies of organizing and conducting instructional or training activities. There will be an opportunity to practice these skills. (F, Sp, Su)

MDCS 252 - Supervisory Skills Training
Semester Prerequisite: None
Participants are trained in the essential processes of supervision: leading with a participative style, giving instructions, enhancing the natural motivation of employees, communicating effectively, "active listening," improving employee performance, conducting performance appraisals, problem solving, managing time, and building team cohesiveness. (F, Sp, Su)

MDCS 254 - Advanced Supervisory Skills
Semester Prerequisite: None
Based on an extensive needs analysis conducted among organizations who are members of the Howell Network, this 40-hour program was designed to improve the skills (e.g., leadership, coaching, conducting meetings, performance appraisal, etc.) of supervisory level managers. (F, Sp, Su)

MDCS 264 - Leading Effective Meetings
Semester Prerequisite: None
The purpose of this workshop is to help participants develop the skills necessary for leading effective meetings. These skills include the many facets of planning and preparing for a meeting, conducting a meeting, and following up on a meeting. (F, Sp, Su)

MDCS 279 - Communicating Thought Effectively
Semester Prerequisite: None
Collecting one's thoughts and speaking coherently are essential if one wishes to present ideas logically. This course will teach participants strategies for organizing their thoughts and presenting them clearly and logically. (F, Sp, Su)

MDCS 280 - Improving Interpersonal Relationships
Semester Prerequisite: None
Good interpersonal skills are essential for productive working relationships and for maintaining an efficient working environment. This seminar provides training to managers on techniques for strengthening interpersonal skills for improved working relationships. (F, Sp, Su)

MDCS 281 - Working With Difficult People
Semester Prerequisite: None
Difficult people create problems! In this practical seminar, participants will observe and practice effective strategies for handling difficult people. Participants will be able to reduce the problems difficult people create. (F, Sp, Su)

MEDA 100 - Medical Assistant/Communication Skills
Semester Prerequisite: Admission to Program
Introduction to role of medical assistant/ administrative clerical office: professionals, medical transcription, telephone communication, scheduling, referral, filing, medical records management, processing incoming and outgoing mail, billing system, and basic banking functions. Also provides students with an understanding of interpersonal skills. (F)

MEDA 131 - Medical Skills I
Semester Prerequisite: AHCC 108/ANAT 145, Admission to Program
Designed to provide knowledge in clinical skills relating to the following topics: universal precautions; venipuncture, venipuncture, capillary puncture, urinalysis, and hematology testing. (F)

MEDA 132 - Medical Skills II
Semester Prerequisite: MEDA 131
Designed to cover both theory and clinical laboratory skills necessary to perform in the clinical setting. Skills and procedures covered will include surgical asepsis, minor surgery assisting, electrocardiography, medication administration, radiography, and nutrition. (Sp)

MEDA 141 - Basic Medical Laboratory Procedures
Semester Prerequisite: Admission to Program
This course introduces the student to the clinical laboratory. Laboratory operations and safety will be discussed. Quality assurance issues will be emphasized. Basic principles and procedures for laboratory tests will be presented including collection and preparation of specimens, venipuncture, capillary puncture, urinalysis, and hematology testing. (F)

MEDA 142 - Advanced Medical Laboratory Procedures
Semester Prerequisite: MEDA 141
This course enables the student to understand and perform some of the more complex laboratory tests performed in medical offices. Basic pathophysiology will be discussed. Tests from the following areas will be covered: clinical chemistry, immunology, microbiology, and hematology. Collection and preparation of specimens, etc. (Sp)

MEDA 181 - Administrative Internship
Semester Prerequisite: MEDA 132, MEDA 142, AMCC 110
Administrative practicum is designed to provide application of administrative theory. This course is programmed with specific performance objectives and activities. (Su)

MEDA 182 - Clinical Internship
Semester Prerequisite: MEDA 132, MEDA 142, AMCC 110
Clinical practicum is designed to provide application of theory and practice relevant to the clinical skills required of a medical assistant. The course is designed with specific performance objectives and activities. (Su)

METR 220 - Introduction to Meteorology
Semester Prerequisite: 2.0 Minimum in ISCI 110/ Science Inventory Recommended
Basic Skills Prerequisites: Reading Level 5; Writing Level 4; Math Level 3
This course includes a study of the interrelationships of the elements (e.g., 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. (F)

MFGM 101 - Manufacturing Maintenance
Semester Prerequisite: MATH 050
Basic Skills Prerequisites: Math Level 4
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, Su)

MFGM 102 - Industrial Pneumatics
Semester Prerequisite: MATH 050
Basic Skills Prerequisites: Math Level 4
Introduction to pneumatics, including 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, Su)

MFGM 110 - Machine Maintenance I
Semester Prerequisite: MATH 050/Equivalent
Basic Skills Prerequisites: Math Level 4
Theory and industrial application of machine repair, preventive maintenance, safety practices, and troubleshooting, with actual dismantling and rebuilding of tool room machines. (F, Sp, Su)

MFGM 111 - Machine Maintenance II
Semester Prerequisite: MFGM 110
Advanced theory and practice of machine tool repair including preventive maintenance. Also, the theory and repair of pumps and pneumatic tools will be covered. (F, Sp)
MFGM 120 - MGMT 245

MFGM 120 Industrial Presses
Semester Prerequisite: None
Covers different types of mechanical presses, terminology, purposes, and functions in industry. Includes movies and slides on 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
Semester Prerequisite: MATH 050 (Equivalency)
Basic Skills Prerequisite: Math Level I
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. Also, safe working strength of slings, hooks, sheaves, ropes and chains, and the use of personal safety equipment will be covered. (F, Sp)

MFGM 170 Fork Lift Truck Driver Training
Semester Prerequisite: None
This course will teach the safe operation of industrial fork trucks. The instruction will combine lecture, written materials, and hands-on operation of a fork truck. Students will learn the basic safety guidelines and basic operational procedures of industrial forklift trucks. (F, Sp, Su)

MGMT 200 Creative Thinking for Business
Semester Prerequisite: Any BUSI@MGMT Course/Departmental Approval
This course is designed to develop thinking skills and break down barriers to creativity. An experiential approach is used to apply both critical and creative thinking skills to business situations. (F, Sp, Su)

MGMT 223 Supervision
Semester Prerequisite: None
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 224 Human Resource Management
Semester Prerequisite: None
Principles, problems, and practices of modern business, government, and other organizations involved in the handling of employees from recruiting through post-retirement. (F, Sp)

MGMT 225 Principles of Management
Semester Prerequisite: None
Management principles for middle- and upper-level managers: management relationships, communications, morale, motivation, history of management, theoretical framework, practical applications, qualifications of executives, business ethics, and managerial functions. (F, Sp, Su)

MGMT 227 Training and Development for Business
Semester Prerequisite: None
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 228 Organizational Behavior
Semester Prerequisite: None
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 group behavior and have opportunities to work on skills necessary for successful interaction in organizations. (F, Sp)

MGMT 229 Compensation Management
Semester Prerequisite: LABP 204, MGMT 224/125 229
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)

MGMT 231 Team Development
Semester Prerequisite: None
This course will define and provide an understanding of 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 analyzing problem-solving, decision-making, conducting effective meetings and work sessions, negotiating, and presenting. (F, Sp)

MGMT 234 Diversity in the Workplace—A Domestic and Global Perspective
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 5
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 237 Managing for Continual Improvement
Semester Prerequisite: None
Provides an introduction to concepts of total quality management systems thinking and other new management practices. Covers the history of TQM including key thinkers/leaders. Explores new ways of thinking and leading, methods for continual improvement teams, empowerment, and "learning organizations." (F, Sp)

MGMT 239 Time and Stress Management
Semester Prerequisite: None
Explores relationship between time and stress management: stress is the usual factor for many of our physical and psychological problems. Suggests methods for harnessing its energy positively. Techniques and strategies for efficient time management. Emphasis on creating action plans and initiating corrective actions. (F, Sp)

MGMT 240 How Managers Make Things Happen
Semester 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 jobs, breaking it down into functional components, spotting weaknesses, and taking concrete action to turn them around. (F, Sp, Su)

MGMT 241 How Successful Women Manage
Semester 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 management positions. It is enlightening and an absolute must for any woman who is considering entering or is now a part of management. (Sp, Su)

MGMT 242 Manager's Guide to Working With People
Semester 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. (Sp, Su)

MGMT 243 How to Delegate Effectively
Semester Prerequisite: None
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. (Sp, Su)

MGMT 244 Supervisory Management
Semester Prerequisite: None
This course is designed to help managers at all levels to develop, enhance and upgrade 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
Semester 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)
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
<th>Semester Prerequisite</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGMT 245</td>
<td>Fundamentals of Modern Personnel Management</td>
<td>1</td>
<td>None</td>
<td>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)</td>
</tr>
<tr>
<td>MGMT 247</td>
<td>How to be a Successful Project Manager</td>
<td>1</td>
<td>None</td>
<td>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 aids during a project’s tracking and controlling phases. (F, Sp, Su)</td>
</tr>
<tr>
<td>MGMT 248</td>
<td>Team Building</td>
<td>1</td>
<td>None</td>
<td>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)</td>
</tr>
<tr>
<td>MGMT 249</td>
<td>Dealing With Difficult People</td>
<td>1</td>
<td>None</td>
<td>Discover how seasoned managers cope with difficult personalities in the workplace. This course covers effective communication, 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)</td>
</tr>
<tr>
<td>MGMT 250</td>
<td>Fundamentals of Finance and Accounting/Non-Financial Managers</td>
<td>2</td>
<td>None</td>
<td>Provides the manager with an understanding of finance. 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)</td>
</tr>
<tr>
<td>MGMT 251</td>
<td>Communication Skills for Managers</td>
<td>1</td>
<td>None</td>
<td>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. A video supplement is included. (Sp, Su)</td>
</tr>
<tr>
<td>MGMT 252</td>
<td>How to Deliver a Winning Presentation</td>
<td>1</td>
<td>None</td>
<td>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. (Sp, Su)</td>
</tr>
<tr>
<td>MGMT 253</td>
<td>How to Write Winning Reports</td>
<td>1</td>
<td>None</td>
<td>This course helps students develop a more concise straightforward writing style. It will help you express your ideas more clearly in memos, letters, and reports. (F, Sp, Su)</td>
</tr>
<tr>
<td>MGMT 254</td>
<td>How to Write a Business Plan</td>
<td>2</td>
<td>None</td>
<td>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. (Sp, Su)</td>
</tr>
<tr>
<td>MGMT 255</td>
<td>Strategic Planning for Entrepreneurial Business</td>
<td>1</td>
<td>None</td>
<td>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)</td>
</tr>
<tr>
<td>MGMT 257</td>
<td>Using Math as a Business Tool</td>
<td>1</td>
<td>None</td>
<td>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)</td>
</tr>
<tr>
<td>MGMT 260</td>
<td>How to Analyze the Competition</td>
<td>2</td>
<td>None</td>
<td>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)</td>
</tr>
<tr>
<td>MGMT 261</td>
<td>Psychology of Selling and Winning</td>
<td>1</td>
<td>None</td>
<td>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 vital things to become top professional salespeople and why they should do it in order to sell successfully. (Sp, Su)</td>
</tr>
<tr>
<td>MGMT 262</td>
<td>How to Keep Satisfied Customers</td>
<td>1</td>
<td>None</td>
<td>This course is designed to make the task of keeping customers satisfied an easier one. The ultimate goal of the course is to help improve students’ abilities to communicate effectively with customers. (F, Sp, Su)</td>
</tr>
<tr>
<td>MGMT 263</td>
<td>Successful Marketing for Service Organizations</td>
<td>1</td>
<td>None</td>
<td>Marketing concepts long associated with manufactured goods are now being 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. (Sp, Su)</td>
</tr>
<tr>
<td>MGMT 264</td>
<td>How to Write a Marketing Plan</td>
<td>2</td>
<td>None</td>
<td>This course is designed for 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, department, company, or organization. (Sp, Su)</td>
</tr>
<tr>
<td>MGMT 265</td>
<td>Using Microcomputers in Marketing</td>
<td>1</td>
<td>None</td>
<td>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 learn to create a Web page, designed for interactive learning or reading. (F, Sp, Su)</td>
</tr>
<tr>
<td>MGMT 270</td>
<td>Time and Stress Management</td>
<td>1</td>
<td>None</td>
<td>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 techniques, and ways to reduce stress through changes in lifestyle. (F, Sp, Su)</td>
</tr>
<tr>
<td>MGMT 271</td>
<td>Managing and Resolving Conflict</td>
<td>1</td>
<td>None</td>
<td>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. (Sp, Su)</td>
</tr>
<tr>
<td>MGMT 272</td>
<td>Success Through Assertiveness</td>
<td>1</td>
<td>None</td>
<td>This course will help participants in command of their career in order to respond to difficult situations according to individual desires, interests, and feelings. Participants will learn how to behave properly assertive at the right times and in the right places to help them achieve their goals. (Sp, Su)</td>
</tr>
<tr>
<td>MGMT 273</td>
<td>Understanding and Assessing Personal Interaction Skills</td>
<td>1</td>
<td>None</td>
<td>This course is designed to increase awareness of personal styles and preferences for interacting with others. It also designed to heighten awareness of styles and preferences of people with whom the student interacts daily. (F, Sp, Su)</td>
</tr>
</tbody>
</table>
MGMT 274 – MILS 201

MGMT 274 Personal Financial Planning
Semester 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. Included is a computer template disk to accompany Lotus 1-2-3 for student use during the course. (Sp, Su)

MGMT 275 How to Build Memory Skills
Semester Prerequisite: None
This course uses audiotapes and a textbook to help the student develop skills that improve ability to obtain and use information. The result of using improved listening and memory skills will help realize leadership potential. (Sp, Su)

MGMT 276 How to Improve Writing Skills
Semester Prerequisite: None
This course helps students strengthen their skills in these key communication areas by knowing how to properly use words and phrases associated with business. Workshop practice and review exercises are provided. (Sp, Su)

MGMT 277 Speed Learning
Semester 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. (Sp, Su)

MGMT 280 Management Internship
Semester Prerequisite: Coordinator Approval
Internships provide students with actual job training and experience by working with business owners and/or managers in organizing and/or operating a business. Minimum of 160 hours of work required. (F, Sp, Su)

MGMT 300 Introduction to Management
Semester Prerequisite: MGMT 225/Department Approval
Explores the roles and functions of middle- to upper level managers. Presents an overview and analysis of processes by which managers help organizations obtain their stated goals. Students apply managerial theories and skills to help them develop abilities in the areas of planning, communication, decision-making, change management, and ethics. (F)

MGMT 304 Organizational Development
Semester Prerequisite: MGMT 225/Department Approval
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 Advanced Management Communication Skills
Semester Prerequisite: MGMT 225/Department Approval
This is an advanced course in interpersonal communication for managers. It includes components of listening, interpersonal communication, oral presentations, interviewing techniques, meeting management, business report writing, and persuasive speaking. This is both informational and experiential. (F, Sp)

MGMT 332 Managerial Ethics
Semester Prerequisite: MGMT 225/Department Approval
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 bases for ethical standards. (F, Sp)

MGMT 335 Managerial Statistics
Semester Prerequisite: MATH 082/MATH 112/MATH 117/Equivalent
Application of statistical tools and techniques to improve decision-making processes and reduce managerial decision difficulty from less-than-perfect data. Includes sampling techniques, descriptive sample data, methods of averaging, standard deviation, probability theory, estimation, and hypothesis testing. (F, Sp)

MGMT 337 Human Resource Management Skills
Semester Prerequisite: MGMT 225/MGMT 300/Department Approval
Skill areas involved in the management of human resources are developed. Includes 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
Semester Prerequisite: MGMT 225/MGMT 300/Department Approval
Study of specific topics and issues in today's society that affect managerial decisions. Students explore internal and external constraints on actions. External factors considered are legal, social, educational, and political. Special emphasis is given to international events impacting domestic management practices. Internal factors considered are shareholders, employees, and customers. (F)

MGMT 339 Management Styles and Corporation Strategies
Semester 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
Semester Prerequisite: ACG 310
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 and Policy
Semester Prerequisite: MGMT 330/MGMT 225
This course pulls together learning from the areas of management and marketing to gain an overall organizational perspective which is applied to strategic planning for organizations. The process involves planning an organizational mission while managing the relationship of the organization to its environment. (F, Sp)

MICR - MICROBIOLOGY

MICR 203 Microbiology
Semester Prerequisite: BIOL, CHEM Recommended
Basic Skills Prerequisite: Reading Level 4; Writing Level 4; Math Level 4
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 epistemology, treatment, and prevention of selected infectious human diseases. (F, Sp, Su)

MICR 204 Microbiology Laboratory
Semester Prerequisite: MICR 203/Concurrently
Basic laboratory principles of microbiology for allied health students. Emphasis on microbiology, 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)

MILS - MILITARY SCIENCE

MILS 101 The Military Profession
Semester 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 Land Navigation
Semester Prerequisite: None
This course includes an overview and practical exercise in the use of military topographic maps. This course will cover methods of reading and interpreting map symbols; determining elevation and relief; measuring distance and using the techniques of intersection, resection, modified resection, and polar coordinates to determine location. Lab includes land navigation exercises using a magnetic compass in a field environment. (F, Sp)

MILS 201 Leadership Assessment Program: The Military Leader
Semester 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 small arms rifle marksmanship. (F, Sp)
MKTG 100 Current Issues in Business
Semester 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 119 Marketing and Managing Your Professional Image
Semester Prerequisite: None
This course is a complete guide for everyone and their companies need 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
Semester Prerequisite: None
This course presents the fundamentals of sales and highlights its role in the marketing mix. Students will develop basic skills needed to enter the field. Topics include customer buying habits, sales process, product demonstration techniques, and the analysis of human relations aspects of sales. (F, Sp, Su)

MKTG 121 Advanced Sales
Semester Prerequisite: MKTG 120/Departmental Approval
An analysis of the sales interview. Student presentations are videotaped to assess individual sales skills, evaluate sales style, and provide direction for improvement. (Sp)

MKTG 122 Field Sales Internship
Semester Prerequisite: MKTG 120/Departmental Approval
Practical field sales experience working in consumer or industrial sales. Opportunity to develop advanced selling techniques and refine selling skills. Minimum of 160 hours of work required. (F, Sp, Su)

MKTG 123 Computer Field Sales Internship
Semester Prerequisite: MKTG 120/Departmental Approval
Practical computer field sales experience working in consumer or industrial sales. Opportunity to develop advanced selling techniques and refine selling skills. Minimum of 160 hours of work required. (F, Sp, Su)

MKTG 130 Retailing
Semester 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
Semester 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
Semester 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 research, planning, creative strategy, and media selection. (F, Sp)

MKTG 200 Principles of Marketing
Semester Prerequisite: BUSN 118/Approval
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 understanding of marketing with practical applications. (F, Sp, Su)

MKTG 202 Managerial Marketing
Semester Prerequisite: MKTG 200
The course focuses on the solution of marketing problems through practical 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)

MKTG 204 Marketing Research
Semester Prerequisite: MKTG 200
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)

MKTG 221 Consumer Behavior
Semester Prerequisite: None
Covers the basic perspectives involved in consumer motivation and decision-making. Students will investigate relevant variables that shape consumer action and concepts that integrate the study of consumer behavior with the practice of marketing. (F)

MKTG 231 Independent Study in Marketing
Semester Prerequisite: Coordinator 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 work is required. (F, Sp, Su)

MKTG 232 Independent Study in Marketing
Semester Prerequisite: Coordinator 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 work is required. (F, Sp, Su)

MKTG 233 Independent Study in Marketing
Semester Prerequisite: Coordinator 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 work is required. (F, Sp, Su)

MKTG 235 Marketing Internship
Semester Prerequisite: BUSN 118, MKTG 200, Coordinator Approval
Practical work experience in an approved business setting. Minimum of 160 hours work required. (F, Sp, Su)

MTEC 110 An Introduction to the Broadcast and Electronic Media
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 5
A survey of the history, technology, regulation, economics, programming, and societal effects of the electronic media. (F, Sp, Su)

MTEC 120 Audio Production I
Semester Prerequisite: None
A beginning course which covers the basics of audio theory and production techniques. Included are topics in tape editing, audio mixing, and fundamental digital editing. This class provides the foundational theory for the other classes in the audio series. (F, Sp, Su)

MTEC 121 Audio Recording I
Semester Prerequisite: MTEC 120, MTEC 220 Recommended
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 for the recording session, and multitrack recording. (F, Sp)
MTEC 122 Sound Reinforcement 4
Semester Prerequisite: MTEC 120
A beginning course in sound reinforcement which covers the theory and practice of sound systems and components used for concert sound and other live reinforcement operations. Includes equipment specifications, system design, troubleshooting, and operation of live systems. (Sp)

MTEC 130 Radio Production I 4
Semester Prerequisite: None
Survey of the radio broadcast industry including careers, qualifications, responsibilities, and station operation. Introduces basic studio production and on-air presentations. (F, Sp, Su)

MTEC 150 TV Production I 4
Semester Prerequisite: None
This course places special emphasis on the components of effective visual communication. The development of pre-production processes related to visual composition, scripting, storyboard, lighting, and floor plan 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)

MTEC 151 Electronic Field Production I 4
Semester Prerequisite: MTEC 150 Approval
This course provides the student with an introduction to the process of single camera, remote video production. In addition, the course helps the student in developing an aesthetic reference for critiquing contemporary video programming. In-class assignments are evaluated using technical and artistic guidelines. (F, Sp)

MTEC 220 Audio Production II 4
Semester Prerequisite: MTEC 120
A second course in audio production providing advanced audio theory and production practice. Included are topics in tape editing of musical material, use of audio effects in production, additional production mixing, and audio post-production for video. (F, Sp)

MTEC 221 Audio Recording II 4
Semester Prerequisite: MTEC 121
A second course in recording that covers advanced techniques used in multitrack studio recording. Emphasis is on use of the multitrack studio and signal processing equipment for multitrack recording as well as the use of SMTE and MIDI. (Sp)

MTEC 233 Sound Reinforcement Practicum 2
Semester Prerequisite: MTEC 122
A practical sound reinforcement activity combining specific theories related to the larger project with the opportunity to design, assemble, load, transport, erect, operate, and strike a large outdoor reinforcement system. Students operate the system to provide reinforcement for the bands that play in Riverfront Park on the Fourth of July. (Su)

MTEC 230 Radio Production II 4
Semester Prerequisite: MTEC 130
A survey of diverse radio formats. Consideration is given to the role of the program director and the tools used in format decision making. Techniques used in creating and promoting station image and the effects of ratings are analyzed. (Sp)

MTEC 231 Radio Programming and Promotion 3
Semester Prerequisite: MTEC 130
Presentation of advanced radio and remote production techniques. Emphasis on writing, producing, and performing for commercials, news, and sports programs. (F, Sp)

MTEC 232 Radio Workshop 2
Semester Prerequisite: Departmental Approval
An opportunity for practical experience through access to the campus radio facility. Students work in a variety of station staff positions. (F, Sp, Su)

MTEC 240 Script and Copywriting for the Media 3
Semester Prerequisite: MTEC 110
Basic writing techniques and formats used in preparing program scripts for television, radio, and multimedia productions. Emphasis on practical copywriting techniques for commercial, promotion, public affairs, documentary, and entertainment programs. (Sp)

MTEC 241 Radio News Reporting 3
Semester Prerequisite: MTEC 130
Survey of the broadcast news industry with special emphasis on radio news. This course includes practical exercises in preparing news stories through writing, production, and presentation. Interviewing and feature production are also covered. (F)

MTEC 242 Radio Sales and Marketing 3
Semester Prerequisite: MTEC 110
An introductory course to the profession of advertising sales as it relates to the broadcast media but with special emphasis on radio—the primary training ground for broadcast media account executives. This course covers the profession from advertising basics to the activities of a winning radio sales superstars. (Sp)

MTEC 243 The Ethics and Social Impact of the Media 3
Semester Prerequisite: None
This course explores the effects of the mass media on American culture and society. Topics such as privacy, censorship, violence, and portrayal of minorities and women are discussed. These discussions take place within an ethical reasoning framework. (F, Sp, Su)

MTEC 250 Television Studio Production 4
Semester Prerequisite: MTEC 120
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)

MTEC 251 Electronic Field Production II 4
Semester Prerequisite: MTEC 151
An advanced production course designed to provide the student with high-level instruction in videography and electronic editing techniques. Class sessions contain theoretical 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)

MTEC 252 Lighting for Television and Video 3
Semester Prerequisite: MTEC 151
An advanced instructional seminar on lighting techniques for video and television production. Special emphasis is placed on developing creative and technical lighting techniques for both film and video production. (F)

MTEC 254 Electronic Presentation Graphics 3
Semester Prerequisite: MTEC 130
An introduction to the production of electronically-generated visuals for use with video presentations. Computer-based video and computer graphics is used to create desktop graphics and special effects as elements of television programs. (Sp)

MTEC 290 Guided Independent Study 1
Semester Prerequisite: Departmental Approval
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 study must be submitted by the student prior to registration. (F, Sp, Su)

MTEC 291 Guided Independent Study 2
Semester Prerequisite: Departmental Approval
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 study must be submitted by the student prior to registration. (F, Sp, Su)

MTEC 295 Media Practicum 3
Semester Prerequisite: Departmental Approval
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 Department. Faculty guidance and evaluation are integral parts of the experience. Practicum is intended only for advanced media technology students. (F, Sp, Su)
MTEC 298 Media Internship
Semester Prerequisite: Departmental Approval
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 programs. (F, Sp, Su)

MTEC 298 Special Projects
Semester Prerequisite: Departmental Approval
An opportunity for students to work closely with faculty in the design and development of media-based programs and projects to be used by departments or divisions within the College. (F, Sp, Su)

MUSC 100 Women’s Chorus - Summer
Semester Prerequisite: None
An ensemble of women vocalists composed of students and community members, which develops general musicianship and provides training in choral singing. This group performs three to four concerts throughout the year. Students are required to attend live performances. May be taken up to six semesters for credit. (Su)

MUSC 101 Lansingsingers Vocal Ensemble
Semester Prerequisite: Admission Approval
The purpose of the Lansingsingers, 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)

MUSC 102 Women’s Chorus
Semester Prerequisite: None
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
Semester Prerequisite: None
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
Semester Prerequisite: Departmental Approval
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 106 Private Lesson
Semester Prerequisite: Departmental Approval
This course is a private lesson, 60 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 108 Concert Choir
Semester Prerequisite: Audition Approval
A select 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. (F, Sp)

MUSC 119 Lansing Concert Band
Semester Prerequisite: Audition Approval
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)

MUSC 123 Jazz Ensemble
Semester Prerequisite: Audition Approval
The jazz ensemble will rehearse and perform pieces of various styles and from various periods in jazz and big band development. 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, Su)

MUSC 133 Jazz Theory
Semester Prerequisite: Instructor Approval
This course is designed to acquaint students with basic jazz theoretical principles. Students will gain an understanding of chord symbols, scales and modes, chord-scale relationships, chord substitutions, and harmonization techniques. Students are required to attend live performances. (F)

MUSC 138 Class Piano Major I
Semester Prerequisite: Audition Approval/Music Major
Basic Skills Prerequisite: Reading Level 5; Writing Level 6
The first in a series of two, this course is designed to develop the practical keyboard skills used in a music career. Concepts such as staff notation, rhythmic notation, correct fingering/hand positions, major scales, and primary chords will be the focus of this course. May be taken up to three semesters for credit. (F)

MUSC 139 Class Piano Major II
Semester Prerequisite: MUSC 138
Basic Skills Prerequisite: Reading Level 5; Writing Level 6
Last in a series of two, 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)

MUSC 143 Beginning Piano I - Summer
Semester Prerequisite: None
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 of this course. May be taken up to three semesters for credit. (Su)

MUSC 144 Beginning Piano I
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 4; Writing Level 3
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 of this course. May be taken up to three semesters for credit. (F, Sp)

MUSC 145 Beginning Piano II
Semester Prerequisite: MUSC 144
Basic Skills Prerequisite: Reading Level 4; Writing Level 3
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)

MUSC 154 Class Voice Commercial I—Summer
Semester Prerequisite: None
Beginning course designed to introduce students to vocal techniques and performance skills required in singing/commercial music. Breathing, posture, diction, tone production, interpretative 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)

MUSC 155 Class Voice Commercial I
Semester Prerequisite: None
Beginning course designed to introduce students to vocal techniques and performance skills required in singing/commercial music. Breathing, posture, diction, tone production, interpretative 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)

MUSC 156 Class Voice Commercial II
Semester Prerequisite: MUSC 155
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)
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUSC 157</td>
<td>Applied Lesson I</td>
<td>2</td>
<td>Semester Prerequisite: None 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)</td>
</tr>
<tr>
<td>MUSC 158</td>
<td>Applied Lesson II</td>
<td>2</td>
<td>Semester Prerequisite: MUSC 157 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)</td>
</tr>
<tr>
<td>MUSC 168</td>
<td>Introduction to Musicanship I</td>
<td>2</td>
<td>Semester Prerequisite: None This course is for beginning musicians to gain an understanding of notation 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)</td>
</tr>
<tr>
<td>MUSC 169</td>
<td>Introduction to Musicanship II</td>
<td>2</td>
<td>Semester Prerequisite: MUSC 168 This course is the second in a pair of courses for novice musicians to further their understanding of music notation and theory fundamentals. MUSC 168 builds on material covered in MUSC 167. Students will learn to construct melodies, create phrases, and to harmonize a given or original melody. Students are required to attend live performances. (Sp)</td>
</tr>
<tr>
<td>MUSC 173</td>
<td>Basic Musicanship I</td>
<td>4</td>
<td>Semester Prerequisite: MUSC 168/Departmental Approval This course allows students to gain knowledge and skills necessary to hear and identify named pitches, rhythms, scales, modes, and intervals. This course is the first in a sequence of two courses in music theory, ear-training, and sight-singing. It serves as a freshman requirement for a four-year college music degree. (F)</td>
</tr>
<tr>
<td>MUSC 174</td>
<td>Basic Musicanship II</td>
<td>4</td>
<td>Semester Prerequisite: MUSC 173 This course presents intermediate music theory principles including diatonic and chromatic harmony, four-part writing, counterpoint, basic music forms, and analysis. Aural skills are developed through dictation and sight-singing. This course is second in a sequence of two. It serves as a freshman requirement for a four-year college music degree. (Sp)</td>
</tr>
<tr>
<td>MUSC 179</td>
<td>Class Voice Major I</td>
<td>1</td>
<td>Semester Prerequisite: Departmental Approval 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)</td>
</tr>
<tr>
<td>MUSC 180</td>
<td>Class Voice Major II</td>
<td>1</td>
<td>Semester Prerequisite: MUSC 179 This course continues to train singers in the use of the International Phonetic Alphabet, focusing on the pronunciation of German and French languages. This course builds on the historical and performance emphasis. These language skills will be utilized in performing the literature of the major composers of German, French, and Italian origin. Students are required to attend live performances. (Sp)</td>
</tr>
<tr>
<td>MUSC 181</td>
<td>Class Voice I - Summer</td>
<td>.5</td>
<td>Semester 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)</td>
</tr>
<tr>
<td>MUSC 182</td>
<td>Class Voice I</td>
<td>1</td>
<td>Semester 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, Su)</td>
</tr>
<tr>
<td>MUSC 183</td>
<td>Class Voice II</td>
<td>1</td>
<td>Semester Prerequisite: MUSC 182 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 181. Students are required to attend live performances. May be taken up to three semesters for credit. (F, Sp)</td>
</tr>
<tr>
<td>MUSC 187</td>
<td>Class Guitar - Summer</td>
<td>.5</td>
<td>Semester Prerequisite: None This course is for beginners and experienced players who desire note reading skills. Folk, blues, and classical guitar techniques are presented using basic plec- trum 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. (Su)</td>
</tr>
<tr>
<td>MUSC 188</td>
<td>Class Guitar</td>
<td>2</td>
<td>Semester Prerequisite: None This course is for beginners and experienced players who desire note reading skills. Folk, blues, and classical guitar techniques are presented using basic plec- trum 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)</td>
</tr>
<tr>
<td>MUSC 199</td>
<td>Music Appreciation</td>
<td>2</td>
<td>Semester Prerequisite: None Basic Skills Prerequisite: Reading Level 4; Writing Level 4 Designed for non-music majors, this course develops well-informed, focused listen- ing. 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)</td>
</tr>
<tr>
<td>MUSC 200</td>
<td>Music Fundamentals for Elementary Classroom Teachers</td>
<td>3</td>
<td>Semester Prerequisite: None A mandatory course for elementary, special education, and early childhood majors. This course assesses audio, rhythm, and music appreciation as part of the curriculum. Students are required to attend live performances. (F, Sp, Su)</td>
</tr>
<tr>
<td>MUSC 230</td>
<td>Directed Independent Study</td>
<td>1</td>
<td>Semester Prerequisite: Departmental Approval Advanced study in areas relating to, but not taught in, the curriculum. Students will meet with an assigned faculty member once per week. Students must submit written application detailing their projects for department approval. Students are required to attend live performances. (F, Sp)</td>
</tr>
<tr>
<td>MUSC 231</td>
<td>Directed Independent Study</td>
<td>2</td>
<td>Semester Prerequisite: Departmental Approval Advanced study in areas relating to, but not taught in, the curriculum. Students will meet with an assigned faculty member once per week. Students must submit written application detailing their projects for department approval. Students are required to attend live performances. (F, Sp)</td>
</tr>
<tr>
<td>MUSC 232</td>
<td>Music Seminar</td>
<td>1</td>
<td>Semester Prerequisite: Departmental Approval Students 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)</td>
</tr>
<tr>
<td>MUSC 233</td>
<td>Music Seminar</td>
<td>2</td>
<td>Semester Prerequisite: Departmental Approval Students 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)</td>
</tr>
<tr>
<td>MUSC 240</td>
<td>World Music History I</td>
<td>4</td>
<td>Semester Prerequisite: None Basic Skills Prerequisite: Reading Level 5; Writing Level 6 Fundamental historical and geographical knowledge of music from the early 1800s to the present. Emphasis is placed on the use of music in society. Students are required to attend live performances. (F, Sp, Su)</td>
</tr>
<tr>
<td>Course Code</td>
<td>Course Title</td>
<td>Description</td>
<td>Semester Prerequisite(s)</td>
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<tr>
<td>MUSC 241</td>
<td>World Music History II</td>
<td>建在hooks historical information gleaned from MUSC 240, this class covers world music history from 1600 to the present. Characteristic music, musicianes, and instruments from all areas of the world are discussed, focusing on uses/functions and qualities of music, and emphasizing similarities and differences between world cultures.</td>
<td>MUSC 240</td>
</tr>
<tr>
<td>MUSC 244</td>
<td>Studio Production Commercial</td>
<td>This course, as an introduction to multi-channel recording techniques, covers equipment functions, separation techniques, basic tracks, overdues, and the roles of musicians, producers, and engineers in the commercial recording field. The second half of the course consists of recording session observation in an off-campus recording studio. Students are required to attend live performances.</td>
<td>Departmental Approval</td>
</tr>
<tr>
<td>MUSC 245</td>
<td>Jazz History</td>
<td>Students will be introduced to the origins and traditions of the music closely categorized as &quot;jazz.&quot; Musical styles influential in the development of jazz, such as stride, boogie, new orleans, swing, bebop, &quot;free&quot; or avant-garde, and others, will be studied. Students are required to attend live performances.</td>
<td>None</td>
</tr>
<tr>
<td>MUSC 246</td>
<td>Rock History I - Blues to the British Invasion</td>
<td>This course provides an overview of the elements of rock 'n' roll, and its origins. The student will be introduced to the major figures of rhythm and blues/early rock 'n' roll via recordings of their music. Students are required to attend live performances.</td>
<td>None</td>
</tr>
<tr>
<td>MUSC 248</td>
<td>Rock History II - From 1963 to Present</td>
<td>Students will be introduced to the changes in pop music that have occurred since the early '60s. Developments in styles will be covered via examination of a variety of recordings from the early '60s to the present. Students are required to attend live performances.</td>
<td>None</td>
</tr>
<tr>
<td>MUSC 251</td>
<td>Blues History</td>
<td>An introductory overview of the African-American musical form known as the blues. Using recordings of musicians as a primary source, supplemented with reading, the student will become familiar with the style variations of both regional styles and individual performers. This course will show how the music changed as performers dealt with the factors of urbanization, electricity, social/cultural elements, and more. Students are required to attend live performances.</td>
<td>None</td>
</tr>
<tr>
<td>MUSC 253</td>
<td>Business of Music</td>
<td>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.</td>
<td>None</td>
</tr>
<tr>
<td>MUSC 254</td>
<td>Band Management</td>
<td>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 in-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.</td>
<td>MUSC 253/Approval</td>
</tr>
<tr>
<td>MUSC 257</td>
<td>Applied Lesson I</td>
<td>This course is a private lesson, 60 minutes per week, for music majors. Enrollment is allowed upon successful completion of the MUSC 158 juryed performance. This course may be taken up to three semesters for credit.</td>
<td>MUSC 156</td>
</tr>
<tr>
<td>MUSC 258</td>
<td>Applied Lesson IV</td>
<td>This course is a private lesson, 60 minutes per week, for music majors. Enrollment is allowed upon completion of the MUSC 257 juryed performance. This course may be taken up to three semesters for credit.</td>
<td>MUSC 257</td>
</tr>
</tbody>
</table>

**NURS - NURSING**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Description</th>
<th>Semester Prerequisite(s)</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>NURS 150</td>
<td>Nursing Process I: Introduction to Nursing</td>
<td>The focus of this course is the nursing process as a problem-solving technique for meeting basic human needs. The concepts of perinatal care and cancer are presented and the aging process is emphasized throughout. Clinicals are in nursing homes, extended care facilities, and hospitals.</td>
<td>Admission to Program</td>
<td>9</td>
</tr>
<tr>
<td>NURS 155</td>
<td>Nursing Process II: Common Acute Health Problems</td>
<td>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.</td>
<td>PHCY 202, NURS 150, NURS 200</td>
<td>6</td>
</tr>
<tr>
<td>NURS 165</td>
<td>Nursing Process III: Family Health I</td>
<td>The concepts of infant, child care, and therapeutic communication are discussed. Assessment and care of the childbearing family is presented. Basic needs and developmental tasks of childhood are discussed including effects of change in family systems. Clinicals are in maternal-child units of hospitals and community agencies.</td>
<td>NURS 156, PSYC 205, Admission to Program</td>
<td>5</td>
</tr>
</tbody>
</table>

**MUSC 270 Rock Guitar I**

- **Semester Prerequisite:** None
- **Description:** A presentation on fundamental rhythm and lead guitar techniques and music theory concepts applicable to rock music from its roots to the present, as well as other related popular styles. Students must provide own guitar. Students are required to attend live performances. (F, Sp, Su) | 1 |

**MUSC 273 Advanced Musicianship I**

- **Semester Prerequisite:** MUSC 174
- **Description:** This course is a continuation of the first year of training in the elements of music theory acquired in MUSC 173 and 174. The student will learn such advanced elements of harmony as modulation, chromatic II chords, augmented sixth chords, and chromatic voice leading techniques. The basic principles of musical form will be introduced and the student will continue with more advanced training in sight-singing and ear-training. Students are required to attend live performances. | 4 |

**MUSC 274 Advanced Musicianship II**

- **Semester Prerequisite:** MUSC 273
- **Description:** After the study of classical harmony is completed and the study of basic musical form begun in MUSC 273, MUSC 274 takes up the study of the major classical forms including sonata, rondo, and sonata forms. Counterpoint and 19th Century harmony as well as jazz, set theory, and 12-tone theory will be studied. Advanced training in ear-training and sight-singing will continue. This course is the second in a two-credit music theory and ear-training sequence as a sophomore requirement for a four-year college music degree. Students are required to attend live performances. | 4 |

**MUSC 276 Lyric Writing**

- **Semester Prerequisite:** None
- **Description:** 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, Su) | 2 |

**MUSC 280 Private Songwriting**

- **Semester Prerequisite:** Departmental Approval
- **Description:** Private coaching for music majors, 40 minutes per week, in writing and copyrighting music compositions, giving attention and suggestion in harmony, chord sub-stitution, and formal design. Students are required to attend live performances. May be taken up to six semesters for credit. | 1 |

**MUSC 297 Synthesizers and Computer Music**

- **Semester Prerequisite:** Instructor Approval
- **Description:** 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. | 2 |
NURS 180 Practical Nursing Role 1
Semester Prerequisite: NURS 160, NURS 180/Concurrently
Examine the role of the practical nurse, ethical and legal dimensions of practice, professional organizations, differentiated practice, nursing roles, transition, and preparation for employment. Required to be eligible for NCLEX-RN (National Council Licensed Examination-Practical Nurse). (F, Sp, Su)

NURS 200 Pharmacology 3
Semester Prerequisite: PHGY 206 Recommended, Admission to Program
This course is recommended for students who wish to transfer to a BSN program. Drug categories are discussed in detail as well as nursing responsibilities associated with medication administration. Students are expected to calculate drug dosages. (F, Sp)

NURS 210 LPN-RN Transition 2
Semester Prerequisite: Departmental Approval
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)

NURS 260 Nursing Process IV: Family Health II 5
Semester Prerequisite: NURS 160, NURS 165, Admission to Program
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 Nursing Process V: Family Health III 5
Semester Prerequisite: NURS 160, NURS 165, Admission to Program
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 Nursing Process VI: Chronic Health Problems 4
Semester Prerequisite: NURS 260, NURS 265, MICH 203, MICH 204
The student will use the nursing process in caring for adult clients adapting to chronic health problems. Client education to chronic illnesses, 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 Nursing Process VII: Acute/Critical Health Problems 4
Semester Prerequisite: NURS 260, NURS 265, MICH 203, MICH 204
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 are discussed, as well as fluid-electrolyte and acid-base imbalance. Clinical experiences are in acute care hospitals. (F, Sp)

NURS 290 Nursing Process VIII: ADN as Provider and Manager of Care 3
Semester Prerequisite: NURS 260, NURS 265 Concurrently
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 100 Machine Transcription 3
Semester Prerequisite: CABS 125/OADM 120, WRIT 114/OADM 125
This course is designed for the production of machine transcriptions, by using typists, recorded cassettes, and an IBM PC with word processing software. Proficiency in spelling, punctuation, grammar, and business vocabulary is emphasized. (F, Sp, Su)

OADM 114 College Speedwriting 4
Semester Prerequisite: CABS 101/CPAO 103/Equivalent
Students will learn an alphabetic shorthand. The minimum performance level for dictation and transcription is 70 wpm for three minutes at 90 percent accuracy. (F, Sp)

OADM 150 Certified Professional Secretaries (CPS) Review I 3
Semester Prerequisite: None
Discussion of the secretary's proficiency in office administration and communication. Executive travel, office management, record management and reprography, written business communications, editing, abstracting, and preparing communications in the final format. (F, Sp, Su)

OADM 155 Certified Professional Secretaries (CPS) Review II 3
Semester Prerequisite: None
This course covers the basics of office technology and behavioral science. Topics include automated office systems, telecommunication, and problem solving. (F, Sp, Su)

OADM 195 Human Behavior in the Workplace 3
Semester Prerequisite: None
This course emphasizes the importance of the skill of human relations in the workplace. 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 Vocabularly 3
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 5
This course provides instruction in medical vocabulary and the application of medical terminology using a body-systems approach. Requires good study skills. (F, Sp)

OADM 198 Medical Record Management 3
Semester Prerequisite: OADM 197
This course is a concentrated study of the health care providers, control reimbursement, legal, and quality assurance systems which affect the maintenance of the medical record in various health care delivery settings. (F, Sp)

OADM 200 Critical Thinking 3
Semester 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 201 General Pharmacology for Business 2
Semester Prerequisite: OADM 197/Equivalent
This course is designed for students in the medical secretary, medical transcriptionist, and court and conference reporting curricula. It provides an introduction into pharmacology, its history and terminology, drug categories, and the clinical applications of common drugs by body systems. Provides experience in using several drug references. (F, Sp)

OADM 203 Professional Office Procedures 1
Semester Prerequisite: None
The topics of this course include telephone techniques, handling incoming and outgoing mail, writing certain office documents such as minutes and reports, planning meetings and travel arrangements, interviewing. Computer usage may be emphasized. (Sp)

OADM 205 Legal Vocabulary and Forms Preparation 3
Semester Prerequisite: None
This course utilizes basic legal terminology in general and specialized areas of law. It teaches legal terms and their use in legal context and stresses forms preparation. (F, Sp)

OADM 102 Editing Business Documents 2
Semester Prerequisite: WRIT 114
This course teaches office personnel applied editing skills for business documents and emphasizes locating and correcting errors in typing, word division, format, punctuations, 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 107 Business Calculating Machines 1
Semester Prerequisite: OADM 117/MATH 117/Previous Math
Basic Skills Prerequisite: Math Level 4
This course utilizes the 10-key adding machine, calculator, and electronic printing calculators: operations of addition, subtraction, multiplication, and division; plus business-type problems dealing in percentages, interest, etc. (F, Sp, Su)

240 ■ LANSING COMMUNITY COLLEGE 1997–98
OADM 207 Medical Transcription 3
Semester Prerequisite: OADM 197/CHSE 121, WRIT 114, CABS 165
This course is designed to develop skill in defining and transcribing medical reports with the use of a 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 Information Management I 3
Semester Prerequisite: None
This course includes managing the creation, protection, storage, and disposition of business records, alphabetic indexing, the foundation of other storage methods, selection of proper equipment, and procedures for the operation and control of filing methods and systems. (F, Sp, Su)

OADM 216 Records and Information Management II 4
Semester Prerequisite: OADM 215
This course familiarizes students with the aspects of micrographics and the study of planning, organizing, and controlling records and information management systems. Management of both paper- and electronic-based forms and documents will include design, analysis, usage, retention, and disposal procedures for manual and electronic systems. (F, Sp)

OADM 220 Administrative Office Management 4
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 5; Writing Level 6
This course emphasizes the principles of office management and the role of an office as a service center. Office functions, structure and design, workflow, procedures, job analysis, and issues relating to human resources are covered. (F, Sp, Su)

OADM 222 Advanced Medical Transcription 4
Semester Prerequisite: 3.0 Minimum in OADM 207, ANAT 146
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 230 Seminar: Special Subjects 5
Semester Prerequisite: None
Classroom instruction is given on special topics of current interest to office personnel. Topics for each seminar vary. (F, Sp, Su)

OADM 232 Seminar: Special Subjects 1
Semester Prerequisite: None
Classroom instruction is given on special topics of current interest to office personnel. (F, Sp, Su)

OADM 240 Office Internship 3
Semester Prerequisite: Coordinator Approval
This course is designed to provide on-the-job training relating to an office administration major. Placement is made in an approved training office with an assessment of job performance and an evaluation for future work performance. Volunteer work may be substituted for salary wage. Minimum of 160 hours work is required. (F, Sp, Su)

OADM 275 Cultural Differences in Business 3
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 5; Writing Level 6
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)

OCNL: OCEANOLOGY

OCNL 225 Basic Oceanology 4
Semester Prerequisite: 2.0 Minimum in ISCI 110/Science Inventory Recommended
Basic Skills Prerequisite: Reading Level 4; Math Level 5
An introduction to the modern ocean science describing the basic geological, chemical, physical, and biological marine processes necessary to the comprehensive understanding of the ocean environment. Complementary laboratory exercises are included to provide students with hands-on experience. (F)

PARA - PARAMEDIC

PARA 221 Medical Trauma I 4
Semester Prerequisite: Admission to Program
Builds on previous knowledge acquired as a basic EMT. Provides theoretical background material for management of prehospital emergencies. Course includes roles and responsibilities, anatomy/physiology, airway maintenance, traumatic therapy, assessment and management of respiratory, hemorrhage, shock, and pediatric emergencies. (F, Sp)

PARA 222 Medical Trauma II 4
Semester Prerequisite: PARA 221
PARA 222 incorporates previous knowledge of basic EMT and PARA 221. Provides theoretical background material for management of prehospital emergencies including assessment and management of neurological, behavioral, abdominal, metabolic, gynecologic, and multiple trauma patients. The principles of triage, management of mass casualty incidents, and telecommunications are also included. (Sp, Su)

PARA 231 Cardiology I 2
Semester Prerequisite: Admission to Program
Enables paramedic students to read EKG rhythm strips. It will give them background and understanding of the anatomy, physiology, electrocardiography, and pathophysiology of the heart and cardiovascular system. Much emphasis will be placed on arrhythmia interpretation, treatment modalities, and patient management. (F, Sp)

PARA 232 Cardiology II 2
Semester Prerequisite: PARA 231
Uses information learned in PARA 231 as a basis for more advanced arrhythmia interpretation. Management of cardiac arrest including medications, cardioversion, and defibrillation will be a major emphasis. Pacemakers, other advanced procedures, and arrhythmia will be presented. Application of information, judgment, and decision-making are evaluated. (Sp, Su)

PARA 241 Pharmacology I 2
Semester Prerequisite: Admission to Program
The first course in a two-course sequence. Designed to give the student background necessary for the preparation and administration of drugs used in the field. ACLS drugs will be covered in-depth. (F, Sp)

PARA 242 Pharmacology II 2
Semester Prerequisite: PARA 241
The second course in a two-course sequence. In-depth information on ACLS drugs will be covered. Common drugs that paramedics administer in the field will also be covered. Drug classification, action, use, and side effects are included. (Sp, Su)

PARA 251 Skills I 2
Semester Prerequisite: Admission to Program
Provides introduction of the paramedic skills required for advanced life support and provides the opportunity to apply theory courses information to field practice in a tabletop setting. Skills will be demonstrated, practiced during supervised lab, and tested for competency. Must have excellent basic EMT skills upon entry. (F, Sp)

PARA 252 Skills II 2
Semester Prerequisite: PARA 251
A continuation of Skills I with the introduction of new skills and additional application of theory. Measurement criteria for Skills II competencies becomes more stringent and students must become competent in all paramedic skills as well as applying theory to practice. (Sp, Su)

PARA 261 Clinical I 3
Semester Prerequisite: Admission to Program
Provides clinical time for paramedic students in the first semester. Assignments include nursing home, hospital units such as ED, CCU, ICU, Burn Unit, OB, and Peds; Psych unit simulations on-campus; and designated EMTs agencies under licensed paramedics. (F, Sp)

PARA 252 Clinical II 4
Semester Prerequisite: PARA 261
Provides clinical time for paramedic students in the second semester. Assignments include hospital units such as ED, CCU, ICU, Burn Unit, OB, and OR; simulations on-campus; designated EMT agencies under licensed paramedics, and a community service project. (Sp, Su)
PARA 263  Paramed Internship  3
Semester Prerequisite: None
This course provides field internship with paramedic agency and testing for certification in Advanced Cardiac Life Support. (F, Sp)

**PFAQ - PHYSICAL FITNESS: AQUATICS**

**PFAQ 106 Swimming: Primary Skills**  1

**Semester Prerequisite: None**
This course 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

**Semester Prerequisite: PFAQ 106**
This course stresses development of skills in front crawl and backstroke. Students will be introduced to the elementary backstroke and breaststroke. (F, Sp, Su)

**PFAQ 102 Swimming: Stroke Refinement**  1

**Semester Prerequisite: PFAQ 101/PFAQ 101**
This course builds upon the stroke development level skills. Skill development is placed on front crawl and rhythmic breathing, breaststroke, diving, and survival swimming skills. Emphasis is placed on polishing strokes and increasing swimming distances. (F, Sp, Su)

**PFAQ 104 Swimming/Training**  1

**Semester Prerequisite: None**
This course is designed for persons interested in skill development in all competitive swimming strokes as well as in a fitness program designed. The student should be able to swim 500 yards in 10 minutes. (F, Sp, Su)

**PFAQ 105 Advanced Swimming/Training**  2

**Semester Prerequisite: None**
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, Su)

**PFAQ 106 Water Walking/Toning**  1

**Semester Prerequisite: None**
This course utilizes a variety of walking moves in shallow water to enhance cardiovascular fitness. Toning exercises for arms, abdominal, and thighs are used extensively. (F, Sp, Su)

**PFAQ 107 Water Exercise 1**  1

**Semester Prerequisite: None**
This course utilizes stationary water exercises and water games to improve cardiovascular fitness and flexibility. (F, Sp, Su)

**PFAQ 108 Water Exercise II**  1

**Semester Prerequisite: None**
This course uses stationary water exercise and an introduction to swimming techniques to improve cardiovascular fitness. Wall exercises and water jugs are used to increase strength and flexibility. (F, Sp, Su)

**PFAQ 109 Water Exercise-Plus**  2

**Semester Prerequisite: None**
This course is an intensive water fitness exercise program designed to increase cardiovascular output and muscle strength. Students use water movements to increase flexibility and strength. (F, Sp, Su)

**PFAQ 110 Hydro-Fit Exercise I**  1

**Semester Prerequisite: None**
This course is designed to give the student an overall water fitness workout with little impact to joints or back. The class is held in deep water while exercising with Hydro-Fit weights. Participants must be comfortable in deep water. (F, Sp, Su)

**PFAQ 111 Hydro-Fit Exercise II**  2

**Semester Prerequisite: PFAQ 110/PFAQ 110**
This course is a water fitness program using water resistance to tone, strengthen, develop coordination, and increase flexibility by using Hydro-Fit exercise equipment. Emphasis is placed on increasing abdominal, shoulder/arm, and lower body strength. (F, Sp, Su)

**PFAQ 112 Scuba**  2

**Semester Prerequisite: None**
This course is a basic course in scuba diving. The course includes both classroom and pool training. Upon successful completion of class, the student is eligible for scuba certification following open water training. (F, Sp, Su)

**PFAQ 113 Scuba: Advanced**  2

**Semester Prerequisite: PFAQ 112/PFAQ 112**
This course is designed for certified divers who wish to further their scuba diving skills and knowledge. Topics covered will include diving equipment, underwater navigation, stress and rescue, limited visibility and night diving, dry suit diving, and underwater photography. Certification as an achored and/or specialty diver is available with optional open water training. (F, Sp, Su)

**PFAQ 114 Parent/Infant Water Adjustment**  5

**Semester 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, Su)

**PFAQ 115 Parent/Toddler Water Adjustment**  5

**Semester Prerequisite: PFAQ 113/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, Su)

**PFAQ 116 Parent/Child Swim**  5

**Semester Prerequisite: PFAQ 114/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, Su)

**PFAQ 118 Arthritis Aquatics**  1

**Semester 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. (F, Sp, Su)

**PFAQ 119 Scuba Certification Class**  1

**Semester Prerequisite: PFAQ 112/PFAQ 112/Equivalent**
This course is designed to allow students who have completed scuba PFAQ 112/PFAQ 112 or equivalent to complete their open water scuba certification training. Upon successful completion of the class, the student will receive Scuba Schools International's open water certification. (F, Sp, Su)

**PFCW - PHYSICAL FITNESS: COMBAT/WEIGHT TRAINING**

**PFCW 100 Fencing: Beginning**  1

**Semester Prerequisite: None**
This course is designed to introduce the student to basic skills and theories in foil fencing. Course emphasis is placed on 12 basic skills: advance, retreat, lunge, disengage, coupé, one-two, double, reposte, counter parry and reposte, and advance-lunge. (F, Sp, Su)

**PFCW 101 Fencing: Intermediate**  1

**Semester Prerequisite: PFAQ 100/PFCW 100**
This course builds upon the 12 basic fencing skills and introduces rules and complex fencing movements. Students will use acquired skills in fencing bouts. (F, Sp, Su)

**PFCW 102 Fencing: Advanced**  1

**Semester Prerequisite: PFAQ 101/PFCW 101**
This course reviews the basic skills of fencing and its rules. Students will be introduced to a sequence of fencing movements in a true fencing setting as well as limited use of Sabre and Epee. (F, Sp, Su)

**PFCW 103 Judo: Beginning**  1

**Semester 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
Semester Prerequisite: PEAG 103/FCW 103
This course works toward a series of sequential Judo movements with continued emphasis on throwing and grappling. (F, Sp, Su)

PFCW 105 Karate: Beginning
Semester Prerequisite: None
This course introduces the basic skills of karate: kicking with the feet, and punches with the fists and hands. (F, Sp, Su)

PFCW 106 Karate: Intermediate
Semester Prerequisite: None
This course further develops karate skills with punches with the fists and hands, kicking with feet and knees, and essential body movement in combat activities with an emphasis on free sparring. (F, Sp, Su)

PFCW 107 Karate: Advanced
Semester Prerequisite: PEAG 105/FCW 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 109 Body Building: Introduction
Semester Prerequisite: None
This course is designed to introduce weight training and proper lifting techniques. Emphasis on safety rules, proper use of machinery, and concepts of lifting will be emphasized. (F, Sp, Su)

PFCW 110 Body Building: Beginning
Semester 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
Semester Prerequisite: PEAG 109/FCW 109
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. (F, Sp, Su)

PFDA - PHYSICAL FITNESS: DANCE COURSES

PFDA 141 Ballroom Topics
Semester Prerequisite: None
This course will focus on one or two dances for in-depth study. Introduction to partnership technique, dance posture, basic patterns, and music appropriate for the dance(s) selected. Dances will be selected that reflect student interest, new partnership dance forms, or current popular trends. Enrollment with a partner is strongly encouraged. (F, Sp, Su)

PFDA 142 Ballroom Swing I
Semester 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 lindy. Enrollment with a partner is strongly recommended. (F, Sp, Su)

PFDA 143 Ballroom Western Swing
Semester Prerequisite: None
Techniques, patterns, movements, and styles of Western swing dancing. Includes evaluation of the differences in movement, rhythms, and techniques of various styles. (F, Sp, Su)

PFDA 145 Ballroom Swing II
Semester Prerequisite: DAN 141/PFDA 141
Course designed to build on the techniques introduced in Ballroom Swing I. Includes dances using different styles and speeds of music such as East Coast swing, West Coast swing, jitterbug, and jive. New steps and synchronized rhythms will be introduced. Enrollment with a partner is strongly recommended. (F, Sp, Su)

PFDA 147 Latin Ballroom I
Semester 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
Semester 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
Semester Prerequisite: DAN 141/PFDA 141/DAN 125/DAN 143/144
This course is designed to build on the techniques introduced in Latin 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 153 Cha-Cha/Mambo Workshop
Semester Prerequisite: None
Introductory course in the Latin ballroom dances cha-cha and mambo covering basic components of partnership dancing and basic patterns of movement, footwork, technique, and style. (F, Sp, Su)

PFDA 154 Tango/Samba Workshop
Semester Prerequisite: None
Introductory course in the Latin ballroom dances tango and samba covering basic components of partnership dancing and basic patterns of movement, footwork, technique, and style. (F, Sp, Su)

PFDA 155 Ballroom Hustle Workshop
Semester Prerequisite: None
Designed to introduce students to hustle dance steps and style. Emphasis is on effective partnering, mastering basic patterns, and adapting dance to various forms of music. Class usually includes field trips to local dance venues. (F, Sp, Su)

PFDA 156 Ballroom II
Semester Prerequisite: DAN 142/PFDA 142/Departmental Approval
This course is designed to build on the skills and techniques introduced in Ballroom I. Latin Ballroom I, Ballroom Swing I, or Special Topics. Emphasis will be placed on the following dance styles: waltz, fox trot, cha-cha, rumba, and swing. Enrollment with a partner is strongly recommended. (F, Sp, Su)

PFDA 157 Ballroom III
Semester Prerequisite: DAN 150/PFDA 150/DAN 156/PFDA 156
This is an advanced course in traditional ballroom designed to build on the techniques introduced in Ballroom II, Ballroom Bronze, or Latin Ballroom II. Emphasis will be placed on the following dance styles: waltz, fox trot, cha-cha, rumba, and swing. Enrollment with a partner is strongly recommended. (F, Sp, Su)

PFDA 158 Line Dancing
Semester 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 COURSES

PFFT 105 Aerobic Walking
Semester Prerequisite: None
This course centers on improving core 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, Su)
PFHC 150  Cardiac Education
Semester Prerequisite: None
This course introduces the student to information about the cardiac disease process, rehabilitation, and prevention techniques. The student will learn the role exercise, diet, and stress plays in heart disease. (F, Sp)

PFHC 151  Cardiac Rehabilitation Exercise
Semester Prerequisite: Departmental Approval
This course introduces the student to information about the cardiac disease process, rehabilitation, and prevention techniques. The student will learn the role exercise, diet, and stress plays in heart disease. (F, Sp)

PFHW 100  Health and Wellness Seminar
Semester Prerequisite: None
This course introduces the student to various topics related to health awareness, wellness, and/or prevention. (F, Sp, Su)

PFHW 101  Health and Wellness Seminar
Semester Prerequisite: None
This course introduces the student to various topics related to health awareness, wellness, and/or prevention. (F, Sp, Su)

PFHW 108  Emergency Services Health Awareness
Semester Prerequisite: Emergency Services Student
This course introduces the student to various topics related to health awareness, wellness, and/or prevention. (F, Sp, Su)

PFHW 109  Emergency Services Fitness I
Semester Prerequisite: Emergency Services Student
This course introduces the student to various topics related to health awareness, wellness, and/or prevention. (F, Sp, Su)

PFHW 110  Emergency Services Fitness II
Semester Prerequisite: Emergency Services Student
A continuation of PFHW/PEAK 108. This course introduces the student to various topics related to health awareness, wellness, and/or prevention. (F, Sp)

PFHW 111  Emergency Services Fitness III
Semester Prerequisite: Emergency Services Student
A continuation of PFHW/PEAK 110. This course introduces the student to various topics related to health awareness, wellness, and/or prevention. (F, Sp)

PFHW 112  Emergency Services Fitness IV
Semester Prerequisite: Emergency Services Student
A continuation of PFHW/PEAK 111. This course introduces the student to various topics related to health awareness, wellness, and/or prevention. (F, Sp)

PFHW 123  Human Nutrition
Semester Prerequisite: Biology Recommended
This course introduces the student to various topics related to health awareness, wellness, and/or prevention. (F, Sp)

PFHW 131  Osteoporosis Prevention I
Semester Prerequisite: None
This course introduces the student to various topics related to health awareness, wellness, and/or prevention. (F, Sp, Su)

PFFT 106  First Step to Fitness
Semester Prerequisite: None
A beginning exercise program with emphasis on increasing aerobic capacity through walking, jogging, callisthenics, and light weight lifting. (F, Sp, Su)

PFFT 107  Jogging: Beginning
Semester 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 108  Commitment to Fitness
Semester Prerequisite: None
This course emphasizes commitment to physical fitness as it affects one's quality of life. Class activities, lectures, and discussions are aimed to introduce students to a physically active lifestyle, based on sound academic justification. Personal commitment, lifestyle modification, and willingness to experiment and change are a "prerequisite." (F, Sp, Su)

PFFT 110  Fitness Maintenance
Semester Prerequisite: None
This course is for students with prior experience and knowledge in physical fitness-related activities and a desire to continue fitness maintenance. (F, Sp)

PFFT 111  Aerobic Boxing
Semester 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
Semester Prerequisite: None
This course is designed to increase body flexibility by learning proper stretching techniques and applying these techniques to increase muscle and joint flexibility. (F, Sp, Su)

PFFT 113  Tone and Stretch
Semester Prerequisite: None
This course combines callisthenics and stretching. Students will use floor exercises to tone muscles and increase flexibility. Proper stretching techniques as well as which muscle groups are being worked will be examined. (F, Sp, Su)

PFFT 114  Advanced Circuit Training
Semester Prerequisite: None
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
Semester Prerequisite: None
This course helps students increase cardiovascular function and oxygen efficiency to enhance muscle structure and function through toning exercises, aerobic dancing, and stretching. (F, Sp, Su)

PFFT 122  Step Aerobics
Semester 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 and to improve personal quality of life. (F, Sp)

PFFT 135  T'ai Chi
Semester Prerequisite: None
Introduction to Zazen meditation and basic principles of T'ai Chi. Course covers first 64 movements in the Yang school of T'ai Chi Chuan. (F, Sp, Su)

PFFT 136  Dance Exercise
Semester Prerequisite: None
This course includes warm-ups and exercises from various dance genres including ballet, modern, and jazz designed to develop flexibility, strength, and coordination. Emphasis is placed on toning and stretching. (F, Sp, Su)
PFHW 132 - Osteoporosis Prevention II
Semester Prerequisite: HFVE 131/PFHW 131
This course continues the focus on osteoporosis prevention. The student will continue progressive strength and flexibility exercises, current research, and nutrition information. (F, Sp, Su)

PFHW 145 Nutrition: Critical Issues
Semester Prerequisite: None
This course introduces the student to nutrition and its role in promoting better health. The student will learn concepts and controversies in nutrition including vitamin supplements, natural foods, and other related topics. (F, Sp, Su)

PFHW 146 Choice for Change Weight Control Program
Semester Prerequisite: None
This course introduces the student to a weight management program that follows the American Dietetic guidelines. The student will learn the principles of nutritionally sound low-fat eating and the necessity of regular exercise for permanent weight loss. (F, Sp, Su)

PFHW 147 Mini Choice for Change Weight Control
Semester Prerequisite: None
This mini-course introduces the student to a weight management program that follows the American Dietetic guidelines. The student will learn the principles of nutritionally sound low-fat eating and the necessity of regular exercise for permanent weight loss. (Su)

PFHW 148 Staying on Track: Lifelong Weight Management
Semester Prerequisite: None
A continuation of the principles of Choice for Change Weight Control Program. The student will focus on the behavioral aspects of eating, better techniques for weight management, and changing behavior through awareness. (F, Sp, Su)

PFHW 149 Cholesterol Management
Semester Prerequisite: None
This course introduces the student to a dietary program that can assist in lowering cholesterol levels. The student will learn ways to identify high cholesterol and saturated fats substituting them with a practical, nutritionally sound food plan. (F, Sp, Su)

PFHW 161 Self-Awareness: Key to Wellness
Semester 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, Su)

PFHW 163 Healthy Lifestyles
Semester 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 167 The Consumer and Health Issues
Semester Prerequisite: None
This course introduces the student to the study of health from a holistic perspective—seeing life as a total system. The student will learn awareness and tools for the "Triangle of Health" including the physical, mental, and spiritual. Alternatives in health care will be examined. (F, Sp, Su)

PFHW 169 Un-smoking for Life
Semester Prerequisite: None
This course introduces the student to the habit, patterns, and health effects of smoking. The student will learn ways to permanently stop smoking and will gain information to make healthy lifestyle choices. (F, Sp, Su)

PFHW 199 Fit for Life Exercise
Semester 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 180 Positive Approaches to Stress
Semester Prerequisite: None
This course introduces the student to the role stress has in our lives: physically, emotionally, and mentally. The student will learn to identify his or her own stress styles and become aware of options with coping techniques. (F, Sp)

PFHW 181 Stress Management
Semester Prerequisite: None
This course introduces the student to the nature of stress, how it affects us, and techniques to handle it. The student will learn to develop individualized strategies to deal with his or her stress and increase overall health. (F, Sp, Su)

PFHW 182 Stress Management for Parents
Semester Prerequisite: None
This course introduces the student to stress in child-rearing, for child care providers and parents. The student will gain an understanding of how stress influences family relationships and learn techniques to apply to daily life. (F, Sp, Su)

PFHW 261 Adult Lifestyles Exercise
Semester Prerequisite: Fitness Evaluation, Departmental 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 SPORT/INTEREST

PFIS 100 Bowling: Beginning
Semester Prerequisite: None
This course is a basic introduction to bowling. Primary emphasis is placed on skill development, scoring, and etiquette. (F, Sp, Su)

PFIS 101 Bowling: Intermediate
Semester Prerequisite: None
This course develops further strategies in spotting, consistent ball release, and scoring. (F, Sp, Su)

PFIS 102 Bowling: Advanced
Semester Prerequisite: PEAC 101/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, Su)

PFIS 103 Golf: Beginning
Semester Prerequisite: None
This course is an introduction to the basics of golf which include equipment, grip, stance and posture, club swing, and rules and etiquette of golf. (F, Sp, Su)

PFIS 104 Golf: Advanced/Beginning
Semester Prerequisite: None
This course will provide continuation of the development of grip, stance, and club swing. Visualization and imagery will be introduced in relation to the golf swing. (F, Sp, Su)

PFIS 105 Golf: Intermediate
Semester Prerequisite: None
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
Semester 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 slope, follow, draw, and center are covered. (F, Sp, Su)

PFIS 109 Pool: Intermediate
Semester Prerequisite: None
This course reviews the fundamentals of stance, grip, bridge, aim, and stroke. Skill improvement and concentration techniques are stressed. (F, Sp, Su)

LANSING COMMUNITY COLLEGE 1997-98 - 245
PFIS 111  Table Tennis: Beginning
Semester 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)

PFIS 112  Table Tennis: Intermediate
Semester Prerequisite: None
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)

PFIS 113  Competitive Table Tennis
Semester Prerequisite: PFAC 112/PFIS 112
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 115  Tennis: Beginning
Semester Prerequisite: None
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, Su)

PFIS 116  Tennis: Intermediate
Semester Prerequisite: None
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, Su)

PFIS 117  Tennis: Advanced
Semester Prerequisite: None
This course deals with developing good ball control, court position, topspin shots, and serve/slice shots. Students should be able to execute and demonstrate the following tennis skills: solid ground strokes, net volleys, lobs, and good control of the serve. (F, Sp, Su)

PFIS 118  Bicycling/Touring
Semester Prerequisite: None
This course deals with emergency repairs, proper fit of bicycle, good cycling techniques, and safe use of roads. Students are shown a variety of routes suitable for bicycling in the Lansing area. (F, Sp, Su)

PFIS 119  Bicycling, Camping/Touring
Semester Prerequisite: None
This course is a two-day, self-contained bicycle trip in a scenic area of Michigan. Participants carry their bicycles, gear, and tents for the entire trip. Students will cycle 45-50 miles each day. (F, Sp, Su)

PFIS 120  Tai Chi I
Semester 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. Slow movements train the mind to be in better control of the body. (F, Sp, Su)

PFIS 121  Tai Chi II
Semester Prerequisite: Pead 104/PFIS 120
This course covers more difficult forms in Tai Chi. Yang-style Tai Chi stresses the health and wellbeing of the whole person. Yang-style movements allow students to move in slow, smooth, steady, and continuous movement. (F, Sp, Su)

PFIS 122  Aikido
Semester 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 123  Aikido Continuing
Semester Prerequisite: Pead 107/PFIS 122
This course presents the 6th KYU forms through the 3rd KYU techniques. This course examines the philosophical underpinnings of Aikido. (F, Sp, Su)

PFIS 124  Yoga: Beginning
Semester Prerequisite: None
This course is an introduction to yojic breathing and gentle yojic stretching exercises with emphasis in guided relaxation and meditation. Psycho-acoustic music is used to reduce stress and tension. (F, Sp, Su)

PFIS 125  Yoga: Continuing
Semester Prerequisite: None
This course promotes psycho-physical integration of body and mind through yojic breathing, stretching, and relaxation. Guided breathing and visualization are used to enhance depth and quality of relaxation and meditation. (F, Sp, Su)

PFIS 126  Yoga: Special
Semester Prerequisite: None
This course teaches modified and adaptive yojic breathing and stretching exercises to enhance the body’s mobility of the movement-hindered person. Feldenkrais 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, Su)

PFIS 127  Parent/Child Gymnastic Tumbling I
Semester Prerequisite: None
This course introduces basic tumbling skills to work toward greater motor skill development through tumbling, stretching, balancing skills, and controlled movement. (F, Sp)

PFIS 128  Parent/Child Gymnastics II
Semester Prerequisite: Pead 119/PFIS 127
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. (F, Sp)

PFIS 131  Seminar: Special Subjects
Semester Prerequisite: None
Seminars are designed to meet specific community needs. (F, Sp, Su)

PFIS 132  Seminar: Special Subjects
Semester Prerequisite: None
Seminars are designed to meet specific community needs. (F, Sp, Su)

PFIS 133  Seminar: Special Subjects
Semester Prerequisite: None
Seminars are designed to meet specific community needs. (F, Sp, Su)

PFIS 134  Theory and Practice of Yoga
Semester Prerequisite: Pead 119/PFIS 124/Departmental Approval
This class explores the theoretical foundations of yoga and its historical framework. Lecture, discussion, and in-class practice will give students 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, Su)

PFIS 145  Parent/Child Tumbling I
Semester Prerequisite: None
This course introduces basic tumbling skills to work toward greater motor skill development through tumbling, stretching, balancing skills, and controlled movement. (F, Sp)

PFIS 146  Parent/Child Tumbling II
Semester Prerequisite: PFIS 145
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. (F, Sp)

PFIS 201  Independent Study
Semester Prerequisite: None
This course is a directed research project in the area of physical education, recreation, or athletics. (F, Sp, Su)

PFIS 202  Independent Study
Semester Prerequisite: None
This course is a directed research project in the area of physical education, recreation, or athletics. (F, Sp, Su)
PFIS 203 Independent Study
Semester Prerequisite: None
This course is a directed research project in the area of physical education, recreation, or athletics. (F, Sp, Su)

PFIS 204 Independent Study
Semester Prerequisite: None
This course is a directed research project in the area of physical education, recreation, or athletics. (F, Sp, Su)

PFOA - PHYSICAL FITNESS: OUTDOOR ACTIVITY

PFOA 105 Angling: Beginning
Semester Prerequisite: None
This course is an introduction to the sport of angling with demonstrations of basic angling techniques. Information is provided on Michigan sport fish and their habitat. The class will take fishing trips for steelhead, walleye, salmon, trout, bass, and other game fish. (F, Sp, Su)

PFOA 107 Angling: Advanced
Semester Prerequisite: PEAJ 105/PFOA 105
This course is designed to improve the angler's skills and knowledge of fish habitat. Many sophisticated angling techniques will be discussed. Weekly fishing trips for Michigan's premier gamefish are scheduled. (F, Sp, Su)

PFOA 110 Seminar: Wilderness Survival Techniques
Semester 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 plants, edible plants of the world, and survival at sea. Optional three-day field trip exercise. (F, Sp, Su)

PFOA 111 Seminar: Wild Food Plants
Semester Prerequisite: None
This course introduces 77 kinds of edible wild plants and their uses in cooking. The course material is presented in slides and handouts. Several outdoor experiences are provided. Conservation stressed. (F, Sp, Su)

PFOA 115 Sailing: Beginning
Semester Prerequisite: None
This course is an introduction to basic sailing on Lake Michigan. Students will become familiar with the parts and functions of a sailing vessel. Students will be taught rigging procedures, use of wind, and other basic sailing functions. (F, Su)

PFOA 116 Basic Sailing/Cruising
Semester Prerequisite: None
This course will help students gain first-hand experience in the art of sailing and seamanship. Students will attain confidence necessary to handle a cruising sailing vessel under various conditions which present themselves in the Great Lakes. (Sp, Su)

PFOA 117 Advanced Sailing
Semester Prerequisite: None
This course is designed to give the student an opportunity to experience a major voyage on the Great Lakes applying the terms and course objectives covered in the introductory cruising class. Major emphasis will be placed on advanced piloting and helmsmanship. (Sp, Su)

PFOA 118 Windsurfing
Semester Prerequisite: Ability to Swim
This is an entry-level class designed to provide the student with enough knowledge and experience to safely sail a windsurfer alone in protected waters during moderate weather conditions. Windsurfers and life-jackets are provided. Classes are conducted at the MSU Sailing Club on Lake Lansing. (F, Sp, Su)

PPFR - PHYSICAL FITNESS: PROFESSIONAL COURSES

PPFR 103 Athletic Training I
Semester Prerequisite: None
This course is an overview of injury prevention and care techniques, first aid principles, and equipment and facilities. Other course topics covered are taping procedures and the legal implications for the athletic trainer. (F, Sp)

PPFR 104 Athletic Training II
Semester Prerequisite: PEA 103/PPFR 103
This course will complement the skills and knowledge acquired in Athletic Training I. Course emphasis will be placed on injury assessment, injury treatments, and further rehabilitation skills as they relate to athletic injury. (Sp)

PPFR 105 Psychology of Coaching
Semester Prerequisite: None
This course is a comprehensive introduction to the art and science of coaching, and the art of positive coaching philosophy. (F, Sp, Su)

PPFR 107 Officiating Basketball
Semester Prerequisite: None
This course is an officiating mechanics class for students wishing to officiate basketball at the high school and college levels. Proper court positioning, arm signals, and whistle use are topics covered. (F, Sp, Su)

PPFR 110 Coaching Basketball
Semester Prerequisite: None
This course is designed to prepare the student for coaching the technical aspects of basketball as well as to enhance the student's knowledge of the duties, roles, and responsibilities of the coach. Material will apply to all levels of competition with emphasis placed on high school and college levels. (F, Sp)

PPFR 111 Coaching Volleyball
Semester Prerequisite: None
This course is designed to develop coaching skills in the areas of basic through advanced individual volleyball skills as well as team strategies. Teaching skill progressions and practice planning will be covered. (F, Sp, Su)

PPFR 112 Coaching Soccer
Semester Prerequisite: None
This course places emphasis on teaching the proper execution of the fundamental skills and components of soccer. Individual and team skills will be taught as well as skill progression. (F)

PPFR 114 Basic Lifeguarding
Semester Prerequisite: None
This course is designed to provide the necessary minimum skills of training to qualify as an entry-level lifeguard. (F, Sp)

PPFR 115 Lifeguard Training
Semester 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)

PPFR 116 Water Safety Instruction
Semester Prerequisite: None
This course is designed to assist in teaching basic aquatics skills for instructors. Teaching modalities and how different students learn is covered. (F, Sp)

PFTS - PHYSICAL FITNESS: TEAM SPORT

PFTS 100 Basketball: Beginning
Semester 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, Su)

PFTS 101 Basketball: Women
Semester Prerequisite: None
This course for women is designed to emphasize the game, rules and regulations of women's basketball. The student will be instructed on passing, shooting, skill development, and team play as well as individual skill improvement. (F, Sp, Su)
PFTS 102  Basketball: Advanced
Semester Prerequisite: None
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, Su)

PFTS 103  Volleyball: Beginning
Semester 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, Su)

PFTS 104  Volleyball: Intermediate
Semester Prerequisite: PFTS 103
This course focuses on the development of proper serving, setting, forearm passing, and spiking skills. Game strategies and player positioning are taught in more detail. (F, Sp, Su)

PFTS 107  Indoor Soccer
Semester Prerequisite: None
This course is designed to introduce students to the basics of indoor soccer and to improve the level of understanding the game through instructions and discussions. Passing and shooting drills are emphasized along with team play concept. Modifications to soccer rules are used to accommodate indoor soccer rules and safety. (F, Sp, Su)

PFTS 109  Indoor Soccer Team Competition: Men
Semester Prerequisite: None
This course provides the students with concepts, strategies, and framework of team effort to compete successfully in a competitive soccer environment via intraclass team competition similar to indoor soccer leagues. (F, Sp, Su)

PFTS 109  Indoor Soccer Team Competition: Women
Semester Prerequisite: None
This course provides the students with concepts, strategies, and framework of team effort to compete successfully in a competitive soccer environment via intraclass team competition similar to indoor soccer leagues. (F, Sp, Su)

PHGY - PHYSIOLOGY

PHGY 202  Human Physiology
Semester Prerequisite: 2.0 Minimum in ANAT 201, Biology, Chemistry Recommended
Basic Skills Prerequisite: Reading Level 5
The physiology, regulation and biochemistry of the various organ systems in the human body is 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)

PHIL - PHILOSOPHY

PHIL 151  Introduction to Logic and Critical Thinking
Semester Prerequisite: None
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 (Weltanschuungen), 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
Semester Prerequisite: None
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
Semester Prerequisite: None
Selected 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
Semester Prerequisite: 2.0 Minimum in WRIT 121
Basic Skills Prerequisite: Reading Level 5, Writing Level 8
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)

PHIL 212  World Philosophies II
Semester Prerequisite: 2.0 Minimum in WRIT 121
Basic Skills Prerequisite: Reading Level 5, Writing Level 8
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 250  Contemporary Ethical Problems
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 5, Writing Level 8
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 their possible adaptation to a changing world. Where appropriate, course includes issues of cross-cultural importance which involve multinational concerns. (Sp)

PHIL 295  Independent Study
Semester Prerequisite: Departmental Approval
Special research projects and/or individual readings in philosophy. Students will invest no less than 32 hours for each credit earned. Enrollment is usually restricted to Honors students who have grade point averages of at least 3.0 in courses offered by this department. (F, Sp, Su)

PHIL 296  Independent Study
Semester Prerequisite: Departmental Approval
Special research projects and/or individual readings in philosophy. Students will invest no less than 32 hours for each credit earned. Enrollment is usually restricted to Honors students who have grade point averages of at least 3.0 in courses offered by this department. (F, Sp, Su)

PHON - PHONICS

PHON 108  Introduction to Phonics
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 2, Writing Level 2
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 syllabification, accent, the pronunciation system, structural analysis of words, and the relationship of phonics to reading and spelling. (F, Sp)

PHYS - PHYSICS

PHYS 200  Applied Physics
Semester Prerequisite: None
Basic Skills Prerequisite: Math Level 4
This course includes basic principles of construction, electronics, electrical, civil, hydraulic, metal working, heating, and air conditioning technologies as they relate to the physical sciences. Provides basic training in fundamental physical phenomena and simple machines with emphasis put on their application to practical shop and field problems. (F, Sp)

PHYS 201  Introductory Physics I
Semester Prerequisite: 2.0 Minimum in MATH 122
Basic Skills Prerequisite: Math Level 8
First in a two-semester sequence of algebra-based physics courses designed to present the fundamental principles of physics, emphasizing applications to other fields. Topics include mechanics, 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
Semester Prerequisite: 2.0 Minimum in PHYS 201
Continuation of PHYS 201. Topics include electricity and magnetism, vibrations and waves, sound, light and optics, nuclear physics, quantum physics, elementary particles, relativity, and cosmology. Demonstrations and hands-on activities and projects complement the lecture topics. (F, Sp, Su)

PHYS 215 Physics I: Mechanics
Semester Prerequisite: 2.0 Minimum in MATH 151
Basic Skills Prerequisite: Reading Level 5
First in a three-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 Physics II: Electromagnetism, Waves, and Optics
Semester Prerequisite: 2.0 Minimum in MATH 132, PHYS 215
Second in a three-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, Su)

PHYS 225 Physics I Laboratory
Semester Prerequisite: PHYS 201/Concurrently PHYS 215/Concurrently Equivalent
Basic Skills Prerequisite: Reading Level 5
Laboratory course which complements PHYS 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
Semester Prerequisite: PHYS 202/Concurrently PHYS 216/Concurrently Equivalent
Basic Skills Prerequisite: Reading Level 5
Laboratory course which complements PHYS 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, Su)

POLS 206 Advanced Government Internship
Semester Prerequisite: Departmental Approval
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, Su)

POLS 230 Sex Roles and Political Change in a Post-Industrial Society
Semester Prerequisite: None
An exploration of change in sex-roles and family structure in response to changing economic, social, and political forces. Topics to be covered include sex-role socialization, divorce and remarriage, and social changes in the economy, politics, and the military. The course blends a variety of perspectives within the social sciences. (Sp)

POLS 240 Introduction to Public Policy
Semester Prerequisite: None
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 American Political Parties and Interest Groups
Semester Prerequisite: None
Basic Skills 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 citizen. Included is the role and function of interest groups in American politics. (F)

POLS 260 Comparative Political Systems
Semester Prerequisite: None
Basic Skills 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)

POLS 270 International Relations
Semester Prerequisite: None
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 280 Supreme Court and Landmark Decisions
Semester Prerequisite: None
An analysis of the United States Supreme Court. Particular emphasis will be devoted to Supreme Court decision-making. A number of landmark Supreme Court decisions will be reviewed from historical, political, public policy, institutional, and behavioral perspectives. (F)

POLS 295 One Credit Independent Study in Political Science
Semester Prerequisite: Departmental Approval
Independent project involving research, reading, and experience in political science. The project, chosen by the student, must be approved in advance by the department chair, must be supervised by a member of the faculty, and must meet specific academic goals. (F, Sp, Su)

POLS 296 Two Credit Independent Study in Political Science
Semester Prerequisite: Departmental Approval
Independent project involving research, reading, and experience in political science. The project, chosen by the student, must be approved in advance by the department chair, must be supervised by a member of the faculty, and must meet specific academic goals. (F, Sp, Su)

POLS 297 Three Credit Independent Study in Political Science
Semester Prerequisite: Departmental Approval
Independent project involving research, reading, and experience in political science. The project, chosen by the student, must be approved in advance by the department chair, must be supervised by a member of the faculty, and must meet specific academic goals. (F, Sp, Su)
PSYC 175  Psychology of Death: A Preparation for Living  3
Semester Prerequisite: None
Examines psychological theories, concepts, and research that pertain to the study of death and personal death awareness. Topics include the dying process, suicide, death anxiety, children's concept of death, care of the dying, ethical decisions, social issues and considerations, near-death experiences, and the grieving process. (Sp)

PSYC 195  Biofeedback  3
Semester Prerequisite: None
An understanding of the link between stress and illness with application of biofeedback instruments to achieve stress reduction. Also covered are: quieting responses, meditation, breathing techniques, progressive relaxation, nutrition, guided imagery, visualization, and burn-out prevention. Students will use instruments in the lab for personal stress reduction. (Sp)

PSYC 200  Introduction to Psychology  4
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 5; Writing Level 3
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, sensation, perception, development, learning, motivation, emotion, cognition, personality, abnormality, therapy, and social behavior. (F, Sp, Su)

PSYC 202  Psychology of Personality  3
Semester Prerequisite: PSYC 200
Discussion of concepts of adjustment, conflict, mental processes, and behavior modification. Survey of leading theories of personality emphasizing their implications for assessing and modifying normal personality. (F, Sp, Su)

PSYC 203  Social Psychology  3
Semester Prerequisite: PSYC 200
A theoretical and empirical approach to understanding individual social and group behavior. Examines the person and the social environment with a focus on attitudes, interpersonal behavior, and group processes. (F)

PSYC 204  Educational Psychology  3
Semester Prerequisite: PSYC 200
An investigation of the contribution of psychology to education. Emphasis will be placed upon aspects of child growth and development, motivation, learning, measurement, and group dynamics that affect the achievement of pupils in the classroom. (F, Sp, Su)

PSYC 205  Human Growth and Development  3
Semester Prerequisite: PSYC 200
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 interplay of maturation and experience. (F, Sp, Su)

PSYC 209  Cognitive Psychology  3
Semester Prerequisite: PSYC 200
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. (Sp)

PSYC 210  Biological Psychology  3
Semester Prerequisite: PSYC 200, Science Course
Biological psychology is an integration of physiology, psychology, and several other related disciplines. The course provides an in-depth exploration of the brain and the relation between it and behavior. Specific topics include sensory processing, learning and memory, sleep and disorders, and disorders of depression and schizophrenia. (Sp)

PSYC 221  Child Psychology  3
Semester Prerequisite: PSYC 200
Explores theories and principles of child development from conception to puberty. The course covers psychological, sociological, and biological aspects of maturation and development. (F, Sp, Su)

PSYC 222  Adolescent Psychology  3
Semester Prerequisite: PSYC 200
Examines theoretical and empirical literature related to adolescence, emphasizing biological, psychological, and sociological aspects of maturation and development from puberty to young adulthood. (Sp)

PSYC 240  Psychology of Human Sexuality  3
Semester Prerequisite: PSYC 200
An exploration of psychological aspects of human sexuality, including research methods, response, identity, development, attraction and intimacy, communication, orientation, attitudes, diseases, and disorders. (Sp)

PSYC 250  Abnormal Psychology  3
Semester Prerequisite: PSYC 200
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)

PSYC 295  One Credit Independent Study in Psychology  1
Semester Prerequisite: Departmental Approval
An independent project involving research, reading, and experience in psychology. The project, chosen by the student, must be approved in advance by the department chair, must be supervised by a member of the faculty, and must meet specific academic goals. (F, Sp, Su)

PSYC 296  Two-Credit Independent Study in Psychology  2
Semester Prerequisite: Departmental Approval
An independent project involving research, reading, and experience in psychology. The project, chosen by the student, must be approved in advance by the department chair, must be supervised by a member of the faculty, and must meet specific academic goals. (F, Sp, Su)

PSYC 297  Three-Credit Independent Study in Psychology  3
Semester Prerequisite: Departmental Approval
An independent project involving research, reading, and experience in psychology. The project, chosen by the student, must be approved in advance by the department chair, must be supervised by a member of the faculty, and must meet specific academic goals. (F, Sp, Su)
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>QUAL 100</td>
<td>Introduction to Quality Assurance</td>
<td>3</td>
<td>None</td>
<td>This course explores the historical evolution of total quality management and introduces the concepts of continuous improvement and process systems. Current quality control theories from both service and manufacturing environments are examined. (F, Sp)</td>
</tr>
<tr>
<td>QUAL 103</td>
<td>Quality and Statistics for Quality Assurance</td>
<td>3</td>
<td>None</td>
<td>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, QC curves, and basic acceptance sampling concepts. The student will also be exposed to computer applications. (F, Sp)</td>
</tr>
<tr>
<td>QUAL 104</td>
<td>Process Control Charting</td>
<td>3</td>
<td>QUAL 103</td>
<td>This course introduces the student to the theory, application, selection, and interpretation of both variable and attribute control charts. A variety of manufacturing as well as service sector examples are used. (F, Sp)</td>
</tr>
<tr>
<td>QUAL 107</td>
<td>Problem-Solving Techniques</td>
<td>3</td>
<td>None</td>
<td>This course introduces the student to various problem-solving tools and methods that can be used effectively for process or project improvement. A variety of both manufacturing and service applications will be examined. (F, Sp)</td>
</tr>
<tr>
<td>QUAL 115</td>
<td>Metrology</td>
<td>4</td>
<td>QUAL 103/Approval</td>
<td>Introduces the student to the theory, use, and application of conventional and digital measurement instrumentation. Designed to fulfill the needs of quality assurance and skilled trades students requiring a foundation in metrology. (F)</td>
</tr>
<tr>
<td>QUAL 121</td>
<td>Introduction to Statistical Process Control</td>
<td>3</td>
<td>None</td>
<td>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, Su)</td>
</tr>
<tr>
<td>QUAL 124</td>
<td>Quality Service and Customer Satisfaction</td>
<td>3</td>
<td>None</td>
<td>This course explores the meaning of reliable customer service and the effects of changing customer expectations. Topics include quality concepts, terms and techniques as they apply to service quality, gaps between customer expectations and service performance, determining customer expectations, and measuring customer satisfaction. (Sp)</td>
</tr>
<tr>
<td>QUAL 200</td>
<td>Quality Improvement Teams</td>
<td>4</td>
<td>None</td>
<td>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)</td>
</tr>
<tr>
<td>QUAL 203</td>
<td>Quality Planning and Systems Management</td>
<td>4</td>
<td>None</td>
<td>This course focuses on developing, managing, and implementing quality assurance systems. Course material and assignments are designed to develop student skills in intracompany, vendor, and customer quality relationships including quality planning, quality manual and procedure development, communication, training for quality certification programs, and continuous improvement. (Sp)</td>
</tr>
<tr>
<td>QUAL 205</td>
<td>Cost of Quality</td>
<td>3</td>
<td>QUAL 100</td>
<td>Introduces the student to definitions and philosophy of quality costs through the interactions of typical accounting methods and the alignment of quality cost practices. Topics include basic financial concepts, trend analysis, problem areas, reducing costs, and planning. (Sp)</td>
</tr>
<tr>
<td>QUAL 209</td>
<td>Reliability</td>
<td>3</td>
<td>None</td>
<td>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. (Sp)</td>
</tr>
<tr>
<td>QUAL 212</td>
<td>Applied Statistics for Quality Assurance</td>
<td>4</td>
<td>QUAL 105</td>
<td>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 will also be covered. (F)</td>
</tr>
<tr>
<td>QUAL 215</td>
<td>Experimental Design in Quality Assurance</td>
<td>4</td>
<td>QUAL 212</td>
<td>This course covers the concepts of analysis of variance and experimental design. Topics include one and two way ANOVA, variance graphical and numerical tests for effects, determination and testing of residuals, and the use of mathematical models. (Sp)</td>
</tr>
<tr>
<td>QUAL 224</td>
<td>Supervisory Skills for Quality</td>
<td>3</td>
<td>None</td>
<td>This course will help students to develop skills for supervising personnel in a production environment consistent with current quality engineering principles. Topics include influence factors, employee selection and development, task analysis, equipment and resource utilization, and continuous improvement of quality and productivity utilizing data and employee involvement. (F)</td>
</tr>
<tr>
<td>QUAL 239</td>
<td>Project Management</td>
<td>3</td>
<td>QUAL 215</td>
<td>Covers skills and techniques required to successfully manage a project. Topics include project planning, understanding multiple dimensions of project performance, setting goals and objectives, selecting a project manager and team, developing a work breakdown structure, applying scheduling tools PERT, Gantt and critical path method, project evaluation, and project termination. (F, Su)</td>
</tr>
</tbody>
</table>

RDGR 101 | Personal Reading I                               | 1       | Departmental Approval | May be taken concurrently with other reading courses to provide extra instruction and practice. One-to-one instruction. Requires enrollment in READ 005 (lab). (May repeat for credit three times.) (F, Sp, Su) |

RDGR 102 | Personal Reading II                              | 2       | Departmental Approval | May be taken concurrently with other reading courses to provide extra instruction and practice. One-to-one instruction. Requires enrollment in READ 005 (lab). (May repeat for credit three times.) (F, Sp, Su) |

RDGR 103 | Personal Reading III                             | 3       | Departmental Approval | May be taken concurrently with other reading courses to provide extra instruction and practice. One-to-one instruction. Requires enrollment in READ 005 (lab). (May repeat for credit three times.) (F, Sp, Su) |

READ 005 | Reading Laboratory                               | 0       | None          | May be taken concurrently with other reading courses to provide extra instruction and practice. One-to-one instruction. Requires enrollment in READ 005 (lab). (May repeat for credit three times.) (F, Sp, Su) |

READ 100 | Reading Clinic IA                                | 4       | None          | Designed to teach fundamental reading skills and also to improve confidence and self-esteem. Provides a personal program which combines private tutoring with directed practice. For students whose reading skills range from pre-literate to basic literacy. Requires enrollment in READ 005, which arranges times for laboratory attendance. (May repeat for credit three times.) (F, Sp, Su) |
READ 101 Reading Clinic IIA
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 1; Writing Level 1
Designed to teach fundamental reading skills and also to improve confidence and self-esteem. Provides a personal program which combines private tutoring with directed practice. For students who have some basic literacy skills. Requires enrollment in READ 005, which arranges times for laboratory attendance. (May repeat for credit three times.) (F, Sp, Su)

READ 102 Reading Clinic IIB
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 1; Writing Level 1
Designed to teach fundamental reading skills and also to improve confidence and self-esteem. Provides a personal program which combines private tutoring with directed practice. For students who have some basic literacy skills. Requires enrollment in READ 005, which arranges times for laboratory attendance. (May repeat for credit three times.) (F, Sp, Su)

READ 103 Reading Clinic III
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 1; Writing Level 1
Designed to teach fundamental reading skills and also to improve confidence and self-esteem. Provides a personal program which combines private tutoring with directed practice. For students who have some basic literacy skills. Requires enrollment in READ 005, which arranges times for laboratory attendance. (May repeat for credit three times.) (F, Sp, Su)

READ 104 Reading Skills IA
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 1; Writing Level 1
Designed to teach fundamental reading skills and also to improve confidence and self-esteem. Provides a personal program which combines private tutoring with directed practice. For students who have some basic literacy skills. Requires enrollment in READ 005, which arranges times for laboratory attendance. (May repeat for credit three times.) (F, Sp, Su)

READ 105 Reading Skills IIA
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 1; Writing Level 1
Designed to teach fundamental reading skills and also to improve confidence and self-esteem. Provides a personal program which combines private tutoring with directed practice. For students who have some basic literacy skills. Requires enrollment in READ 005, which arranges times for laboratory attendance. (May repeat for credit three times.) (F, Sp, Su)

READ 106 Reading Skills IB
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 1; Writing Level 1
Designed to teach fundamental reading skills and also to improve confidence and self-esteem. Provides a personal program which combines private tutoring with directed practice. For students who have some basic literacy skills. Requires enrollment in READ 005, which arranges times for laboratory attendance. (May repeat for credit three times.) (F, Sp, Su)

READ 107 Reading Skills IIB
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 1; Writing Level 1
Designed to teach fundamental reading skills and also to improve confidence and self-esteem. Provides a personal program which combines private tutoring with directed practice. For students who have some basic literacy skills. Requires enrollment in READ 005, which arranges times for laboratory attendance. (May repeat for credit three times.) (F, Sp, Su)

READ 108 Individualized Reading A
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 1; Writing Level 1
Designed for average readers, especially adults in the working community who wish to improve their reading proficiency with one-to-one instruction and directed practice. Students concentrate on skills that need strengthening. Requires enrollment in READ 005, which arranges times for laboratory attendance. (May repeat for credit three times.) (F, Sp, Su)

READ 109 Individualized Reading B
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 1; Writing Level 1
Designed for average readers, especially adults in the working community who wish to improve their reading proficiency with one-to-one instruction and directed practice. Students concentrate on skills that need strengthening. Requires enrollment in READ 005, which arranges times for laboratory attendance. (May repeat for credit three times.) (F, Sp, Su)

READ 110 Reading: Essential Strategies
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 2; Writing Level 2
Designed to provide a transition from mastery of basic reading skills and individuated tutorial literacy instruction to a mainstream, classroom learning experience. Includes emphasis in reading for main ideas, rapid information processing skills for improving comprehension, drawing conclusions from implied meaning, and application of techniques to insure academic survival. (F, Sp, Su)

READ 113 Reading Skills
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 3; Writing Level 2
Designed to help students further skills in comprehension in various types of reading. This course emphasizes refinement in reading skills through classroom activities. (F, Sp, Su)

READ 115 Reading Comprehension
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 4; Writing Level 3
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 164 Speed Reading
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 5; Writing Level 5
Designed for the student of 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)

READ 173 Critical Reading I
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 6; Writing Level 6
Designed to help students think critically about what they read. This course focuses on evaluating factual material, looking at such things as the authority of the writer, bias/objectivity of the writer, purpose of the writer, up-to-dateness/validity of the material, use of reasoning and support, and the bias/objectivity of the reader. This course precedes Critical Reading II. (Sp, Su)

READ 174 Critical Reading II
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 7; Writing Level 7
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 rationality what he/she reads. (F, Sp, Su)

REAL ESTATE

REAL 253 HP 17B Seminar
Semester Prerequisite: None
This course will acquaint the user of the Hewlett Packard HP-17B Calculator with basic functions, financial calculations, and related real estate calculations. It is designed to provide additional practice with the HP-17B for students currently enrolled in REAL 273, but it is open to any interested students. (Sp)

REAL 271 Introduction to Real Estate
Semester 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 - RESP 133

REAL 273 Real Estate Investment 3
Semester Prerequisite: REAL 271/REAL 274/Departmental Approval
Emphasis on investment analysis, financing, depreciation, capital gains, exchanging, and federal tax implications of real estate acquisitions, ownership, and disposal. (Sp)

REAL 274 Real Estate License Exam 3
Semester Prerequisite: None
Intensive 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
Semester 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
Semester 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-tenant relations, accounting for investment properties, real estate as an investment, managing apartments, office space, retail stores, and special-purpose buildings. (F, Sp)

REAL 278 Real Estate Inspection and Construction 3
Semester Prerequisite: None
A course in basic construction for salespersons, brokers, and those interested in learning more about single-family residential construction. Topics include construction basics, from excavation to finished stages; various architectural styles; mechanical systems, their operation and interrelationships; reading a house plan; common problems of house, site selection; and building materials. (F)

REAL 279 Residential Appraisal 3
Semester 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 free standing single family dwellings are valued. Students will also be acquainted with professional standards and ethics. (F)

REAL 290 Real Estate Law 3
Semester Prerequisite: REAL 271/REAL 274/Departmental Approval
Topics covered include: land and its elements, land titles, land interests, abstracts and title insurance, deeds, easements, liens, mortgages, land contracts, and foreclosure and landlord-tenant relations, private land-use controls including restrictions, covenants, and tax policies pertaining to real estate. (Sp)

REAL 281 Successful Home Buying Seminar 1
Semester Prerequisite: None
The successful home buying seminar introduces students to the fundamentals of selling and buying a home. Participants will learn what they need to know about the buying and selling process, from determining needs to closing procedures. (F, Sp)

RELIG - RELIGION

RELIG 211 World Religions I 4
Semester Prerequisite: 2.0 Minimum in WRIT 121
Basic Skills Prerequisite: Reading Level 5; 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)

RELIG 212 World Religions II 4
Semester Prerequisite: 2.0 Minimum in WRIT 121
Basic Skills Prerequisite: Reading Level 5; 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)

RELIG 241 Old Testament Literature 4
Semester Prerequisite: WRIT 121 (ENGL/WRIT 122 Recommended)
This course surveys the content of Judaism's Bible (Christianity's Old Testament) in its original Hebrew cultural and religious context, using some of the insights of modern critical scholarship. The origins and early development of the Hebrews and their religious beliefs and practices are examined. (F)

RELIG 242 New Testament Literature 4
Semester Prerequisite: WRIT 121 (ENGL/WRIT 122 Recommended)
This course surveys the content of Christianity's New Testament in its original Greek and Greco-Roman context, using some of the insights of modern critical scholarship. The origins and early development of Christianity and its religious beliefs and practices are examined. (Sp)

RELIG 250 Religions of East Asia 4
Semester Prerequisite: 2.0 Minimum in WRIT 121
Basic Skills Prerequisite: Reading Level 5; 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)

RESP - RESPIRATORY THERAPY COURSES

RESP 123 Cardiopulmonary Applied Basic Sciences and Microbiology 2
Semester Prerequisite: Admission to Program
This course explores selected areas of physical and biological sciences as applied to the practice of cardiopulmonary care. Basic physical sciences emphasize the states of matter, gasses, fluid, and application laws. Biological science application concerns microbiology of pathogens, infections control, and surveillance in medical practice. (F)

RESP 125 Cardiopulmonary Anatomy and Physiology 3
Semester Prerequisite: Admission to Program
The course explores general medical terminology while providing an in-depth study of cardiopulmonary anatomy and physiology. Emphasis will be placed on building medical vocabulary and word usage in relation to anatomy and physiology of the respiratory, cardiovascular, and blood and lymph systems. (F)

RESP 126 Cardiopulmonary Physiology and Pathophysiology 3
Semester Prerequisite: RESP 123, RESP 125/Departmental Approval
Explores the physiology and pathophysiology of the cardiopulmonary system, detailed analysis of pulmonary mechanics and studies, gas transport, circulatory system, acid-base balance, VQ relationships, control of ventilation, and hypoxia is provided. Emphasis is placed in study of the systems in health and disease. (Sp)

RESP 128 Cardiopulmonary Pharmacology and Metrology 2
Semester Prerequisite: Admission to Program
A study of general concepts of pharmacology and metrology for use in cardiopulmonary care. Emphasis is placed in pulmonary drugs and cardiovascular drugs. Medically-related math skills are developed through example and exercise. (F)

RESP 131 Respiratory Therapy Technology I 4
Semester Prerequisite: Admission to Program
Introductory course in professional respiratory care that includes didactic instruction, clinical lab and clinical lab experience. The emphasis is placed on infection control, medical gases, aerosol and humidity therapy, physical assessment, and patient care principles. Topics of universal precautions and hygiene for the healthcare provider are stressed. (F)

RESP 132 Respiratory Therapy Technology II 5
Semester Prerequisite: RESP 131
Exploration of theory and techniques in individual respiratory care techniques. The areas include medical gas, analyzers and blending, aerosol therapy, airway management, chest physiology, maximum demand inspiration (M.D.I.), intermittent positive pressure breathing (I.P.P.B.), and continuous mechanical ventilation. (Sp, Su)

RESP 133 Respiratory Therapy Technology III 3
Semester Prerequisite: RESP 132
A continuation of the techniques in RESP 132. Emphasis is placed in the following areas: advanced critical care techniques, pulmonary diagnostics, resuscitation and advanced cardiac life support, rehabilitation and home care, hemodynamic monitoring, chest radiology, neonatology, and pediatrics. (Sp, Su)

LANSING COMMUNITY COLLEGE 1997-98 253
RESP 142 Respiratory Therapy Clinical Practice I
Semester Prerequisite: RESP 131
Companion clinical practice course emphasizing the techniques covered in lecture and campus lab in RESP 132. (Sp)

RESP 143 Respiratory Therapy Clinical Practice II
Semester Prerequisite: RESP 132, RESP 142
Companion clinical practice course emphasizing the techniques covered in lecture and campus lab in RESP 132 and RESP 133. (Su)

RESP 234 Respiratory Therapy Technology IV
Semester Prerequisite: RESP 133
Presents advanced concepts and techniques necessary in specialized areas of respiratory therapy practice with an emphasis on emerging concepts in techniques and care appliances for this decade. Units of instruction in material and personal management for a clinical environment are presented. (F)

RESP 235 Respiratory Therapy Technology V
Semester Prerequisite: RESP 234
A continuation of RESP 234 which presents concepts and techniques necessary in specialized areas of respiratory practice with an emphasis on emerging concepts in techniques and care appliances for this decade. (Sp)

RESP 244 Advanced Respiratory Clinical Practice III
Semester Prerequisite: RESP 143
Designed to provide practice of respiratory care in actual clinical settings for specialized contemporary care. These areas include required areas of adult and pediatric critical care, chronic respiratory care, pulmonary function studies, and neonatal intensive care. Optional areas of study include sleep studies, pulmonary home care, pulmonary rehabilitation, and cardiology. (F)

RESP 245 Advanced Respiratory Clinical Practice IV
Semester Prerequisite: RESP 244
As the continuation of RESP 244, it too is designed to provide supervised practice of respiratory care in actual clinical settings for each of the highly specialized contemporary care areas. (Sp)

RESP 251 Practice of Pulmonary Medicine
Semester Prerequisite: RESP 133
Practicing respiratory therapist, pulmonologist, and other physicians share theory, techniques, and ethics involved in their practice of pulmonary medicine. Designed to not only shape the roles and practices of new therapists, but to promote understanding among different professionals involved in the practice of pulmonary medicine. (F)

RESP 252 Respiratory Professional Testing and Management
Semester Prerequisite: RESP 251
Examines in detail two vital areas of professional development of the respiratory therapist. The system of professional advancement for therapists is explored: diagnostic and practice professional examination for the certification and registry levels are analyzed closely. Units of instruction in material and personal management for a clinical environment are presented. (Sp)

SAFE – SAFETY

SAFE 110 Safe Practices and First Aid
Semester Prerequisite: None
Covers first aid and treatment through lectures, demonstrations, and practice as outlined by the American Red Cross or equivalent; safe working practices with hand tools and around machines; safety devices on machines and how to identify and use them. (F, Sp)

SCIS / SCIENCE SEMINARS

SCIS 296 Independent Study in Science
Semester Prerequisite: Departmental Approval
Special study in science topics such as geology, astronomy, physiology, chemistry, physics, ecology, zoology, or other natural sciences. The topic is chosen by the student, and the project is supervised by a member of the Science Department. Students meet with a supervising instructor by arrangement. (F, Sp, Su)

SCIS 299 Independent Study in Science
Semester Prerequisite: Departmental Approval
Special study in science topics such as geology, astronomy, physiology, chemistry, physics, ecology, zoology, or other natural sciences. The topic is chosen by the student, and the project is supervised by a member of the Science Department. Students meet with a supervising instructor by arrangement. (F, Sp, Su)

SEDEV - STUDENT DEVELOPMENT

SEDEV 103 Preventing Parent Burnout
Semester Prerequisite: None
This course is designed to facilitate understanding of parent burnout and its impact on mental and physical functions. The class will address causes, stages and symptoms, family and relationships, and problem-solving. The course will provide multiple skills and mechanisms to cope with stress and prevent parent burnout. (F, Sp, Su)

SEDEV 118 Stretching Your Dollars
Semester 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)

SEDEV 121 Exploring Your Potential
Semester 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)

SEDEV 123 Career Bridge
Semester Prerequisite: None
Career Bridge enhances a smooth transition to college course work through 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)

SEDEV 124 Techniques of Study
Semester 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, note taking, reading and memory strategies, library use, and taking exams. A valuable aid for beginning and advanced students. (F, Sp, Su)

SEDEV 125 Career Planning
Semester 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)

SEDEV 128 Elimination of Self-Defeating Behavior
Semester Prerequisite: None
Learning how to self-defeating behaviors are started, maintained, and how they can be eliminated is the goal of the course. 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)

SEDEV 129 Career Research
Semester 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  
Semester 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 securing employment. Group discussions focus upon personal attitude toward job hunting. (F, Sp, Su)

SDEV 142  Assertiveness  
Semester Prerequisite: None  
Assertive behavior is interpersonal behavior in which a person expresses his/her opinions, feelings, beliefs, wants, personal rights, and values in such a way that the rights of others are not violated. Techniques covered teach participants to identify and practice expressing interpersonal rights and assertive skills. (F, Sp, Su)

SDEV 145  Organizing Time  
Semester 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)

SDEV 150  Divorce Adjustment  
Semester 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)

SDEV 152  Understanding Men  
Semester Prerequisite: None  
The course will examine and explore contemporary masculinity. Participants will gain a clearer understanding of the male role, male stereotypes, and societal expectations and their impact on men, on relationships, one's self, and one's culture. (F, Sp, Su)

SDEV 153  Men's Discussion Group  
Semester Prerequisite: None  
This course will explore the male mode of relating in relationships. The impact of societal cultural expectations of men will be examined and how these expectations affect men's work, communication with one another, and their families. (F, Sp, Su)

SDEV 156  I'm OK/You're OK  
Semester Prerequisite: None  
This course is designed to explore concepts related to transactions analysis (T.A.) and how these concepts can enrich our lives. Where is each of us a child, an adult, and a parent reacting to the world around us? Increased personal awareness about ourselves can help us to be more effective. (F, Sp, Su)

SDEV 157  Single Parenting  
Semester 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)

SDEV 158  Anger Awareness  
Semester Prerequisite: None  
Based on the objective redefinition of anger, this course offers the opportunity to better understand and express this most troublesome human emotion. Self- exploration exercises, journal writing, group sharing, role-playing, lectures, and reading are parts of the learning process leading to "adaptive anger" skills when enhanced self-esteem and relationships. (F, Sp)

SDEV 169  Women as Winners  
Semester 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)

SDEV 171  Rational Living  
Semester Prerequisite: None  
Using the teachings of Rational Emotive Training, a variety of approaches will be used to provide students with insight into the sources of problems. Techniques are offered to avoid frustration when the world is not the way it "should" be and for overcoming difficult situations at school, home, and on the job. (F, Sp, Su)

SDEV 173  Women Moving Beyond Codependency  
Semester Prerequisite: None  
Students will learn that codependency is an unhealthy way of relating to oneself and others. New techniques will be learned so that healthier relational choices can be made. Emphasis will be on the conviction that each person can grow and heal, and engage in conscious, committed, cooperative relationships. (F, Sp, Su)

SDEV 190  Success Group  
Semester Prerequisite: None  
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)

SDEV 192  Counseling for College Success  
Semester Prerequisite: None  
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)

SDEV 195  Building Healthy Relationships  
Semester Prerequisite: None  
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 make in building a healthier relational life style. (F, Sp, Su)

SDEV 202  Teach Yourself a New Way to Think  
Semester Prerequisite: None  
Sessions are designed to break traditional mind patterns to assist the change process. Students study a variety of thinking strategies and learn new creative thinking techniques. These include imagination, motivation, humor, forced relationships, visualization, and fantasy. The course is general in approach and not specific to any one academic discipline. (F, Sp)

SDEV 204  Self-Defense and Women I  
Semester Prerequisite: None  
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 focus on responses to unarmed attacks. (F, Sp, Su)

SDEV 205  Self-Defense and Women II  
Semester Prerequisite: SDEV 204  
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 "guarding defense" responses to armed attacks, multiple attackers, and special assaultive situations. (F, Sp, Su)

SDEV 220  Parenting Skills  
Semester Prerequisite: None  
This course is designed for anyone interested in the development of parenting skills. Skills will include active listening, problem solving, and resolution of family conflict. Application of skills involves infants, pre-schoolers, school-age, and older children. (F, Sp)

SDEV 226  Career Planning and Women  
Semester Prerequisite: None  
Students will be guided through the process of career decision-making focusing on self-exploration and career exploration. Discussions and exercises, in a small group setting, help students identify their interests, skills, and values, including women's issues. Concurrently, students explore careers through library research, computerized resources, and informational interviews. (F, Sp)

SDEV 237  Black Women's Awareness  
Semester Prerequisite: None  
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 these needs be met? (F, Sp, Su)

LANSING COMMUNITY COLLEGE 1997-98
<table>
<thead>
<tr>
<th>PROGRAM</th>
<th>CR</th>
<th>Credits</th>
<th>SEMESTER</th>
<th>PREREQUISITE</th>
<th>DESCRIPTION</th>
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<tr>
<td><strong>SDEV 240 Empathy Training—Listening Skills/Facilitating Decisions</strong></td>
<td>2</td>
<td></td>
<td></td>
<td>None</td>
<td>The course will involve the development of skills necessary for the effective resolution of interpersonal conflicts. (F, S, Su)</td>
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<tr>
<td><strong>SDEV 245 Dealing With Stress</strong></td>
<td>1</td>
<td></td>
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<td>None</td>
<td>The course will involve the development of skills necessary for the effective resolution of interpersonal conflicts. (F, S, Su)</td>
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<tr>
<td><strong>SDEV 248 Women's Re-entry Seminar</strong></td>
<td>2</td>
<td></td>
<td></td>
<td>None</td>
<td>The course will involve the development of skills necessary for the effective resolution of interpersonal conflicts. (F, S, Su)</td>
</tr>
<tr>
<td><strong>SDEV 271 Living Alone Creatively</strong></td>
<td>1</td>
<td></td>
<td></td>
<td>None</td>
<td>The course will involve the development of skills necessary for the effective resolution of interpersonal conflicts. (F, S, Su)</td>
</tr>
<tr>
<td><strong>SIGN 150 Orientation to Deafness</strong></td>
<td>2</td>
<td></td>
<td></td>
<td>None</td>
<td>The course will involve the development of skills necessary for the effective resolution of interpersonal conflicts. (F, S, Su)</td>
</tr>
<tr>
<td><strong>SIGN 156 American Sign Language I</strong></td>
<td>3</td>
<td></td>
<td></td>
<td>None</td>
<td>The course will involve the development of skills necessary for the effective resolution of interpersonal conflicts. (F, S, Su)</td>
</tr>
<tr>
<td><strong>SIGN 161 American Sign Language II</strong></td>
<td>3</td>
<td></td>
<td></td>
<td>None</td>
<td>The course will involve the development of skills necessary for the effective resolution of interpersonal conflicts. (F, S, Su)</td>
</tr>
<tr>
<td><strong>SIGN 165 American Sign Language III</strong></td>
<td>3</td>
<td></td>
<td></td>
<td>None</td>
<td>The course will involve the development of skills necessary for the effective resolution of interpersonal conflicts. (F, S, Su)</td>
</tr>
<tr>
<td><strong>SIGN 164 American Sign Language IV</strong></td>
<td>3</td>
<td></td>
<td></td>
<td>None</td>
<td>The course will involve the development of skills necessary for the effective resolution of interpersonal conflicts. (F, S, Su)</td>
</tr>
<tr>
<td><strong>SIGN 158 Expressive Manual Communication</strong></td>
<td>2</td>
<td></td>
<td></td>
<td>None</td>
<td>The course will involve the development of skills necessary for the effective resolution of interpersonal conflicts. (F, S, Su)</td>
</tr>
<tr>
<td><strong>SIGN 162 Creative Arts Signing</strong></td>
<td>2</td>
<td></td>
<td></td>
<td>None</td>
<td>The course will involve the development of skills necessary for the effective resolution of interpersonal conflicts. (F, S, Su)</td>
</tr>
<tr>
<td><strong>SIGN 166 Linguistic Principles of American Sign Language</strong></td>
<td>3</td>
<td></td>
<td></td>
<td>None</td>
<td>The course will involve the development of skills necessary for the effective resolution of interpersonal conflicts. (F, S, Su)</td>
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<tr>
<td><strong>SIGN 168 Deaf Culture and History</strong></td>
<td>3</td>
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<td>None</td>
<td>The course will involve the development of skills necessary for the effective resolution of interpersonal conflicts. (F, S, Su)</td>
</tr>
<tr>
<td><strong>SIGN 169 Advanced Fingerspelling</strong></td>
<td>2</td>
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<td>None</td>
<td>The course will involve the development of skills necessary for the effective resolution of interpersonal conflicts. (F, S, Su)</td>
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<tr>
<td><strong>SIGN 250 Deaf Culture and History</strong></td>
<td>3</td>
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<td></td>
<td>None</td>
<td>The course will involve the development of skills necessary for the effective resolution of interpersonal conflicts. (F, S, Su)</td>
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<tr>
<td><strong>SIGN 251 Principles of Interpreting I</strong></td>
<td>3</td>
<td></td>
<td></td>
<td>None</td>
<td>The course will involve the development of skills necessary for the effective resolution of interpersonal conflicts. (F, S, Su)</td>
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<tr>
<td><strong>SIGN 252 Principles of Interpreting II</strong></td>
<td>3</td>
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<td></td>
<td>None</td>
<td>The course will involve the development of skills necessary for the effective resolution of interpersonal conflicts. (F, S, Su)</td>
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<tr>
<td><strong>SIGN 261 Sign to Voice Interpreting I</strong></td>
<td>3</td>
<td></td>
<td></td>
<td>None</td>
<td>The course will involve the development of skills necessary for the effective resolution of interpersonal conflicts. (F, S, Su)</td>
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<tr>
<td><strong>SIGN 262 Sign to Voice Interpreting II</strong></td>
<td>3</td>
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<td></td>
<td>None</td>
<td>The course will involve the development of skills necessary for the effective resolution of interpersonal conflicts. (F, S, Su)</td>
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<tr>
<td><strong>SIGN 264 Advanced Interpreting and Transliterating Techniques</strong></td>
<td>3</td>
<td></td>
<td></td>
<td>None</td>
<td>The course will involve the development of skills necessary for the effective resolution of interpersonal conflicts. (F, S, Su)</td>
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<tr>
<td><strong>SIGN 267 Practicum I</strong></td>
<td>3</td>
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<td>None</td>
<td>The course will involve the development of skills necessary for the effective resolution of interpersonal conflicts. (F, S, Su)</td>
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<tr>
<td>Course Code</td>
<td>Title</td>
<td>Description</td>
<td>Credits</td>
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<tr>
<td>SIGN 265</td>
<td>Practicum II</td>
<td>Combines student interpretation lectures and supervised placement in various interpreting settings to allow directed observation and application of practical interpreting skills. Students will spend a total of 32 clock hours in their placement setting. (Su)</td>
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<tr>
<td>SIGN 269</td>
<td>Practicum III</td>
<td>Combines student interpretation lectures and supervised placement in various interpreting settings to allow directed observation and application of practical interpreting skills. Students will spend a total of 32 clock hours in their placement setting. (Su)</td>
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<tr>
<td>SOCL 120</td>
<td>Introduction to Sociology</td>
<td>A survey of major perspectives, concepts, and methods of sociology. Emphasis is given to societal origins, evolution, and organization; culture; socialization; stratification; social institutions; and social change. (F, Sp, Su)</td>
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<tr>
<td>SOCL 185</td>
<td>The Africans</td>
<td>A survey of the cultural, social, political, and economic importance of Africa in the modern world. The course will include the television series, &quot;The Africans.&quot; (Sp)</td>
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<tr>
<td>SOCL 196</td>
<td>Japan Adventure Orientation</td>
<td>This course is designed specifically for the Japan Adventure participants in order to offer them information on the background, nature, activities, and related rules and regulations of the Japan Adventure Program. (F)</td>
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<tr>
<td>SOCL 254</td>
<td>Marriage and Family</td>
<td>This course is designed specifically for the Japan Adventure participants in order to offer them information on the background, nature, activities, and related rules and regulations of the Japan Adventure Program. (F)</td>
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<tr>
<td>SOCL 255</td>
<td>Contemporary Social Problems</td>
<td>Consideration of current social problems, such as family stability, environmental decline, educational decline, health care, public and private indebtedness, racism, poverty, crime, and urbanization, from a framework of sociological theory and recent empirical studies. (Sp)</td>
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<tr>
<td>SOCL 280</td>
<td>Minority Groups</td>
<td>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)</td>
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<tr>
<td>SOCL 261</td>
<td>America in the Civil Rights Years</td>
<td>This course explores the social, political, and economic aspects of the civil rights movement in the United States from 1954 to 1965. Key concepts, events, and participants in the movement will be studied in order to illuminate how it has affected the course of American politics and society. (Sp)</td>
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<tr>
<td>SOCL 295</td>
<td>One-Credit Independent Study in Sociology</td>
<td>Independent project involving research, reading, and experience in sociology and/or anthropology. The project, chosen by the student, must be approved by the department chair and be supervised by a faculty member. The project must meet specific academic goals. (F, Sp, Su)</td>
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<tr>
<td>SOCL 296</td>
<td>Two-Credit Independent Study in Sociology</td>
<td>Independent project involving research, reading, and experience in sociology and/or anthropology. The project, chosen by the student, must be approved by the department chair and be supervised by a faculty member. The project must meet specific academic goals. (F, Sp, Su)</td>
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<tr>
<td>SOCL 297</td>
<td>Three-Credit Independent Study in Sociology</td>
<td>Independent project involving research, reading, and experience in sociology and/or anthropology. The project, chosen by the student, must be approved by the department chair and be supervised by a faculty member. The project must meet specific academic goals. (F, Sp, Su)</td>
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<tr>
<td>SOWK 101</td>
<td>Introduction to Social Work</td>
<td>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)</td>
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<td>SOWK 203</td>
<td>Social Work Interviewing: Concepts and Skill Practice</td>
<td>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. (Sp)</td>
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<td>SOWK 205</td>
<td>Social Welfare</td>
<td>This course introduces the principles, concepts, and methods of community organization techniques. Emphasis is on the introduction of basic practice skills and intervention techniques within a framework of beginning theoretical knowledge. (F)</td>
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<td>SPAN - SPANISH</td>
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<tr>
<td>SPAN 115</td>
<td>Conversational Spanish I</td>
<td>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)</td>
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<tr>
<td>SPAN 116</td>
<td>Conversational Spanish II</td>
<td>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 cultures, and essential grammar for communication. Class taught largely in Spanish. (F, Sp, Su)</td>
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<tr>
<td>SPAN 121</td>
<td>Elementary Spanish I</td>
<td>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)</td>
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<tr>
<td>SPAN 122</td>
<td>Elementary Spanish II</td>
<td>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)</td>
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</table>
SPAN 201 Intermediate Spanish I
Semester Prerequisite: SPAN 102/SPAN 122/Equivalent/Approval
First course of a two-semester sequence in intermediate Spanish. Begins with intermediate review of grammar, 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
Semester Prerequisite: SPAN 201/Equivalent/Approval
Second course of a two-semester sequence in intermediate Spanish. Continues an intermediate review of grammar, intensifies vocabulary building, strengthens listening comprehension and composition-writing, and improves oral fluency through intensive discussions on the cultures of the Spanish-speaking world. Class taught entirely in Spanish. (Sp)

SPAN 295 Independent Study
Semester Prerequisite: Departmental Approval
Special research projects and/or individual readings in Spanish. Students will invest no less than 25 hours for each credit earned. Enrollment is usually restricted to honors students who have grade point averages of at least 3.0 in courses offered by this department. (F, Sp, Su)

SPAN 296 Independent Study
Semester Prerequisite: Departmental Approval
Special research projects and/or individual readings in Spanish. Students will invest no less than 30 hours for each credit earned. Enrollment is usually restricted to honors students who have grade point averages of at least 3.0 in courses offered by this department. (F, Sp, Su)

SPCH 110 Oral Communication in the Workplace
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 5; Writing Level 2
Introduction to oral communication skills in business and the workplace. Students will learn to interact effectively in diverse workplace situations. Activities include participating in interviews, managing group dynamics, orienting employees, giving presentations, and using current technology to enhance business communication. (F, Sp, Su)

SPCH 120 Dynamics of Communication
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 5; Writing Level 2
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 Fundamentals of Public Speaking
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 2; Writing Level 2
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
Semester Prerequisite: None
Introduction to fundamental principles and skills of interpersonal communication. Students investigate techniques for interacting effectively in family, interpersonal, and small business 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 200 Nonverbal Communication
Semester 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
Semester Prerequisite: None
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
Semester Prerequisite: None
Introduction to intercultural communication theory and skills. Students investigate the concepts of communication and culture and learn how such variables as perception, world view, religion, language, and nonverbal systems influence interactions between people of different cultural backgrounds. Class discussions, learning activities, and assignments help students develop their intercultural communication skills. (Sp)

SPCH 295 Independent Study in Speech I
Semester Prerequisite: Departmental Approval
Individual projects in speech communication. Students will spend at least two hours a week for each credit earned. (F, Sp, Su)

SPCH 296 Independent Study in Speech II
Semester Prerequisite: Departmental Approval
Individual projects in speech communication. Students will spend at least two hours a week for each credit earned. (F, Sp, Su)

SPEL - SPELLING

SPEL 005 Spelling Laboratory
Semester Prerequisite: None
SPEL 005 arranges the days and times when students will attend spelling lab courses. Students must register for both a spelling lab course, such as SPEL 109, and a section of SPEL 005. (F, Sp)

SPEL 109 Spelling Development I
Semester Prerequisite: Placement Test
Focuses on basic spelling problems and principles progressing from elementary three-letter words through words frequently misspelled. Prepares students for Spelling Development II. (F)

SPEL 110 Spelling Development II
Semester Prerequisite: SPEL 109 (Placement Test)
Advances from intermediate to college level. Covers words frequently misspelled and missed in general college work and practical adult life situations. Includes meaning, pronunciation, and the most useful spelling principles plus their exceptions. (Sp)

SPEL 165 Business Spelling
Semester Prerequisite: SPEL 110 (Placement Test)
Covers specialized and specialized college-level words frequently misspelled and missed in business, includes general spelling principles and their exceptions, unusual and unexpected spellings in the context of dictionary, pronunciation, proofreading, and correct usage. (F, Sp)

STAT - STATISTICS

STAT 179 Introduction to Statistics
Semester Prerequisite: 2.0 Minimum in MATH 121/Placement Test
Basic Skills Prerequisite: Reading Level 5; Writing Level 5
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, f 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, Su)
STAT 215 - THEA 116

STAT 215  Introduction to Probability and Statistics for Business  4
Semester Prerequisites: MATH 122/123/125/130/141/147
Placement Test
Basic Skills Prerequisites: Reading Level 5; Writing Level 5
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, Su)

SURG - SURGICAL TECHNOLOGY

SURG 100  Fundamental Surgical Technician  3
Semester Prerequisites: Admission to Program
Introduction to the 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
Semester Prerequisites: Admission to Program
Lectures 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 Assepsis  2
Semester Prerequisites: Allied Health Professional
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
Semester Prerequisites: 2.5 Minimum in SURG 100. SURG 101
Lectures will present indications for surgery, patient preparation, special equipment and supplies, purpose and expected outcome, and possible complications. (Sp)

SURG 121  Applied Surgical Techniques I  1
Semester Prerequisites: Admission to Program
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 Surgical Techniques II  3
Semester Prerequisites: 2.5 Minimum in SURG 121
Clinical session at hospital. Students' first experience of application of theory and clinical skills in actual surgical procedures. (F)

SURG 123  Applied Surgical Techniques III  5
Semester Prerequisites: 2.5 Minimum in SURG 122
Clinical session at hospital. Continued application of theory and clinical skills in advanced surgical procedures. (Sp)

SURG 124  Applied Surgical Techniques IV  2
Semester Prerequisites: 2.5 Minimum in SURG 123
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 Train I  3
Semester Prerequisites: Program Admission
This is the initial course in a sequence of three. This course is intended to prepare the student to pass the State of Michigan CDL written exam, review D.O.T. rules and proper driver's log book reporting. Some vehicle orientation is included. (F, Sp, Su)

TDTP 111  Truck Train II  3
Semester Prerequisites: TDTP 110
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. (F, Sp, Su)

TDTP 112  Truck Train III  3
Semester Prerequisites: TDTP 111
This is the final course in the Truck Driver Training Program. The students will complete range driving and backing, CDL highway driving, and complete an extensive road trip. The CDL third-party exam will be administered during this course. (F, Sp, Su)

TECH - TECHNOLOGY GENERAL

TECH 115  Technical Related Seminar  1.5
Semester Prerequisites: None
This course will cover a variety of topics in technical related fields. For individuals already employed in the technical environment seeking to upgrade their skills or anyone looking to be employed in a particular technology. (F, Sp, Su)

TECH 164  Boat Building  2
Semester Prerequisites: None
The students learn to build a boat with materials and processes using wood and modern adhesives and coatings in a manner suitable for work in a small shop. Subjects covered include boat design, alternate construction methods, materials required, and laying out the hull. (F, Sp, Su)

TECH 181  Technical Related Seminar  1
Semester Prerequisites: None
This course will cover a variety of topics in technical related fields. For individuals already employed in the technical environment seeking to upgrade their skills or anyone looking to be employed in a particular technology. (F, Sp, Su)

TECH 183  Technical Related Seminar  3
Semester Prerequisites: None
This course will cover a variety of topics in technical related fields. For individuals already employed in the technical environment seeking to upgrade their skills or anyone looking to be employed in a particular technology. (F, Sp, Su)

TECH 184  Technical Related Seminar  4
Semester Prerequisites: None
This course will cover a variety of topics in technical related fields. For individuals already employed in the technical environment seeking to upgrade their skills or anyone looking to be employed in a particular technology. (F, Sp, Su)

THEA - THEATER

THEA 041  Art and Craft of Acting: Scene Study Workshop for High School Students  4
Semester Prerequisites: Departmental Approval
Students work on basic acting, voice, and movement skills, analyze dramatic literature, and present a final classroom performance. Designed for motivated high school students. (Su)

THEA 091  Studio Performance Workshop: Play Performance for High School Students  5
Semester Prerequisites: Approval by Audition
Students will perform an entire production of a chosen script. Focus in the workshop will be on basic acting skills, script analysis, script scoring, rehearsal techniques and strategies, and production skills. (Su)

THEA 110  Introduction to Theatre  3
Semester Prerequisites: None
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  Production Practicum  2
Semester Prerequisites: Departmental Approval
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  Design Practicum I  3
Semester Prerequisites: None
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. (Sp)
THEA 120 Introduction to Acting
Semester 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
Semester Prerequisite: Departmental Approval
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
Semester Prerequisite: Departmental Approval
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 relationships between actor and director. Majors only. (Sp, Su)

THEA 141 Acting I - Contemporary
Semester Prerequisite: Departmental Approval
Fundamentals of acting, including improvisational techniques; mask work; the physical, vocal, and internal development of character; analysis and scoring by means of a contemporary script. Majors only. (F, Sp)

THEA 142 Acting II - Classical
Semester Prerequisite: Departmental Approval
Fundamentals of acting in heightened context. Students will pursue improvisational work, mask work, and scoring. Students will develop an understanding of the power of language through verse and the physical, vocal, and internal development of characters from classical literature. Majors only. (Sp, Su)

THEA 171 Dramatic Form and Function I
Semester Prerequisite: Departmental Approval
An analysis of 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)

THEA 172 Dramatic Form and Function II
Semester Prerequisite: Departmental Approval
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. (Sp, Su)

THEA 180 Improvisation
Semester Prerequisite: Departmental Approval
By using the improvisational techniques of mask work and developmental exercises, this course will train the student in long-term, in-depth character development. (F)

THEA 210 Theatre History
Semester Prerequisite: None
Examination of the history of drama from primitive times to the present, introducing the major producers of theatre history with emphasis on European and American development. Required for all majors. (F)

THEA 222 Directed Study
Semester Prerequisite: Instructor Approval
Directed study for advanced students working under the guidance of faculty on special projects outside the scope of standard classroom instruction. (Sp)

THEA 223 Directed Study
Semester Prerequisite: Instructor Approval
Course for advanced students working under the guidance of faculty on special projects outside the scope of standard classroom instruction. (F, Sp, Su)

THEA 233 Studio Theatre Performance III
Semester Prerequisite: Departmental Approval
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)

THEA 235 Studio Theatre Performance V
Semester Prerequisite: Departmental Approval
Studio Theatre Performance V provides rehearsal and performance opportunities for students in the second-year theatre major. Focus on the exploration of specific theatrical periods and styles in both rehearsal and performance. (F, Sp)

THEA 237 Theatre Special Projects
Semester Prerequisite: Departmental Approval
Students will be given the opportunity to design, direct, produce, or perform in College-supported outdoor theatrical events in the amphitheater or a comparable space. Students will also participate in company class, in which new ideas in acting training will be presented. (Su)

THEA 241 Acting III - Creating Theatre
Semester Prerequisite: Departmental Approval
Acting techniques and styles of different historical periods and/or cultures. Students will study the cross-section of acting styles and periods in focus on in-depth exploration of particular periods or styles. Class limited to second-year majors. In-depth area of study selected by instructor. (Sp)

THEA 251 Stage Voice for the Actor
Semester Prerequisite: Departmental Approval
Course will cover strategies in vocal production and variety; will focus on exercises to develop vocal flexibility from Lisac, Linklater, and/or Berry techniques; and will experience vocal techniques which lead to greater emotional awareness and expressiveness. (F)

THEA 261 Movement for the Actor
Semester Prerequisite: Departmental Approval
Course will cover strategies developing the actor's physical endurance, strength, flexibility, and grace. Students may explore movement in music, stage combat, pantomime, and/or dance styles, and techniques from many world cultures. (F)

THEA 271 Dramatic Form and Function III
Semester Prerequisite: Departmental Approval
Dramatic Form and Function III focuses on the writings of Shakespeare and classical Greeks. The course culminates in each student's selection of a topic and completion of research into the historical response to that topic. For second-year theater majors. (Sp)

THEA 281 Advanced Improvisation II
Semester Prerequisite: Departmental Approval
Students will edit and polish scripts and performances. Students may also work improvisationally with local student groups to develop spontaneity, creativity, and cooperation. (Sp)

THEA 283 Audition Workshop
Semester Prerequisite: Departmental Approval
An intensive workshop in which participants prepare and polish audition materials suited for professional audition or audition for advanced training. Course usually taught by guest actors, agents, or teachers from larger theatrical or film markets. (Sp)

THEA 285 Stage Makeup
Semester 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)

THEA 295 Acting Styles I
Semester Prerequisite: Departmental Approval
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 and is given semester. Usually offered in eight-week format. (F)

THEA 296 Acting Styles Performance
Semester Prerequisite: Departmental Approval
Students choose to rehearse and perform an in-class presentation of skills developed in THEA 295. Usually offered in eight-week format. (Sp)
TRVL 100 Introduction to Travel Agency Operations  3
Semester Prerequisite: None
An introduction to the career opportunities in travel agency, airline, and tour escorting operations. This class is designed to provide an overview of the travel industry—past, present, and anticipated future. (F, Sp, Su)

TRVL 110 Travel Agency Ticketing Domestic/International  3
Semester Prerequisite: TRVL 100 Recommended
The fundamentals of air scheduling, reading, and correctly using domestic and international air tariffs, and calculating the correct fares for itineraries. Learning correct procedures for issuing accountable and nonaccountable tickets. (F, Sp, Su)

TRVL 120 North American Travel I  3
Semester Prerequisite: None
History and development of the 50 U.S. states, Canada, and Mexico with specific location and identification projects. Major points of tourism interest will be discussed along with climate, ethnic influences, distances, and time zones. (F, Sp)

TRVL 125 Foreign Country Travel II  3
Semester Prerequisite: None
The history and development of Central America, South America, and the Caribbean with specific location and identification projects. These will include countries, capitals, principal cities, rivers, lakes, and mountains. Major points of tourist interest will be discussed along with climate, distances and time zones, passports, visas, and other entry requirements. (F, Sp, Su)

TRVL 130 Foreign Country Travel III  3
Semester Prerequisite: None
A study of history and development of the Middle East and Europe, with specific location and identification projects. Major points of tourist interest will be discussed along with climate, distances and time zones, passports and visas, and other entry requirements. (F, Sp, Su)

TRVL 131 Foreign Country Travel IV  3
Semester Prerequisite: None
A study of the history and development of Africa, Asia, and the Pacific with specific location and identification projects. Major points of tourist interest will be discussed along with climate, distances and time zones. Passports, visas, and other entry requirements will be covered. (F, Sp)

TRVL 135 Airline/Airport Operations  3
Semester Prerequisite: None
An introduction of tasks performed by airline and airport personnel along with the basic structure and functions of an airport and the airline carriers. Topics to be discussed include ticket counter operation, the gate area, cargo handling and loading, aircraft weight and balance, and various principles of aeronautics. (F, Sp, Su)

TRVL 140 Computer Reservation Training  3
Semester Prerequisite: TRVL 100/Ability to Type 30 WPM
This is the first of a three-course sequence in instruction and use of the American Airlines SABRE air reservation system. This course is designed to give the student the basic skills required for making airline computer reservations and use of SABREWORKS to create correspondence relating to the travel industry. (F, Sp, Su)

TRVL 145 Introduction to Cruise Sales and Ground Transportation  3
Semester Prerequisite: None
An analysis of cruise, railroads, car rentals, and bus transportation, including how to sell the above. Other information will include costs, selling techniques, and how to select the best transportation for your client using current profiles and listing and reference materials for domestic and international destinations. (Sp, Su)

TRVL 146 Seminar at Sea  2
Semester Prerequisite: None
A course designed to develop a basic understanding of cruise lines and their ships. Students will be able to gain firsthand knowledge of cruise lines and embarkation facilities and also have dialogue with cruise ship staff members and observe daily cruise activities. (Sp)

TRVL 150 Tourism/Travel Operations  3
Semester Prerequisite: None
An introduction to the principles of tourism, practices, and philosophies that offers a practical and realistic education in the business of tourism. (F, Sp, Su)

TRVL 170 Opening/Operating/Franchising a Travel Agency  3
Semester Prerequisite: None
The description and explanation of the procedures involved in starting a new travel agency or acquiring an existing agency. The advantages and disadvantages of co-ops, consortia, and franchising will also be discussed. This course will provide insight into travel agency operations from a management perspective. (F, Sp)

TRVL 180 Your Career/Flight Attendant  3
Semester Prerequisite: None
To provide information and practical knowledge of a career as a flight attendant via lectures, discussion, films, and demonstrations both in the classroom and on an aircraft. Information on the duties and responsibilities of the pilot and flight crew will be discussed. (F, Sp)

TRVL 190 Internship and Seminar  3
Semester Prerequisite: Credits in Travel Program
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 Profitable Travel Sales, Marketing, and Counseling  3
Semester Prerequisite: None
An introduction to methods and techniques used in the modern travel agency covering the marketing environment, identifying consumer needs, and examining the product, price, and promotion. To accomplish the above, the art of negotiations, role playing, telephone etiquette, and human relations skills will be included in the course content. (F, Sp, Su)

TRVL 210 Group Travel/Escorting Operations  4
Semester Prerequisite: None
An overview of group tours and tour escorting operations, and policies and procedures required by tour companies. Content includes how to locate groups, how to organize group travel, how to assemble the group tour package, and how to be an effective tour leader. (F, Sp)

TRVL 220 International Relations  3
Semester Prerequisite: None
Discusses political, social, and economic relationships between countries and their effects on the travel and tourism industry. Defining and discussing cultural differences, introducing foreign currencies, discussing travel tips, and adjusting to intercultural living experience. (F)

TRVL 230 Travel and Tourism Law and Current Events  3
Semester Prerequisite: None
A travel law course for travel agents and their personnel, as well as individuals interested in travel agency operations. The class creates an awareness of the responsibilities and rights which the law imposes upon and grants to the travel agent. The course will also discuss the consequences caused by failure in those responsibilities. (F, Sp)

TRVL 250 Advanced Computer Ticketing  3
Semester Prerequisite: TRVL 110, TRVL 140
This course will begin with review of materials learned in TRVL 140 and progress to pricing and ticketing, followed by fare construction, fare rules, car, and hotel reservations. SABREVision, the total display with pictures and maps, will be utilized, and further uses of SABREWorks will be taught. (F, Sp, Su)

TRVL 251 Sabre Windows Conversion and Review  1
Semester Prerequisite: TRVL 250/Departmental Approval
This course is designed for the previously trained SABRE student to convert and/or review their knowledge and skills of SABRE to SABRE WITH WINDOWS. This course begins with a review of materials and progresses to hands-on training using Windows applications to create reservations. (F, Sp, Su)

TRVL 255 Advanced Sabre Training  3
Semester Prerequisite: TRVL 250
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 deletion, and ticketing information. Skills taught in the use of SABREWorks, using spreadsheets and database. (F, Sp, Su)

LANSING COMMUNITY COLLEGE 1997-98 n 261
TRVL 260 – WRIT 110

TRVL 260 Travel Agency Accounting
Semester Prerequisite: None
A course designed to explain and describe basic travel agency accounting concepts. Approximately one-half of the course will be dedicated to the completion and interpretation of financial statements. The other half of the course will discuss how accounting systems should be constructed for the travel agency business. (F, Su)

VCEBL - VOCABULARY IMPROVEMENT

VCEBL 109 Vocabulary Improvement I
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 5; Writing Level 4
Knowledge of and extensive practice with word parts (roots, prefixes, and suffixes) are used to develop skills in building vocabulary. Emphasis given to correct oral and written usage, dictionary skills, and mastery of troublesome words. (F)

VCEBL 110 Vocabulary Improvement II
Semester Prerequisite: VCEBL 109
Basic Skills Prerequisite: Reading Level 8; Writing Level 5
Builds on skills developed in Vocabulary Improvement I (word memory, detecting word meaning from context, using dictionary, mastery of roots, prefixes, suffixes) by applying previously mastered roots and skills to learning new, advanced, and career words. (Sp)

WELD - WELDING TECHNOLOGY

WELD 100 Combination Welding
Semester Prerequisite: None
This is a beginning theory and practice course which will introduce the safe operations and applications of oxy-acetylene welding, cutting, brazing, and shielded metal arc welding. Practice will consist of those 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
Semester Prerequisite: WELD 100
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
Semester Prerequisite: WELD 100
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 basic programming of an automated robot cell. (F, Sp, Su)

WELD 111 Gas Tungsten Arc Welding
Semester Prerequisite: WELD 100
Students will develop the skills, principles, and applications of gas tungsten arc welding and plasma arc welding. Welds will be done on different thicknesses of ferrous and nonferrous metals in all positions. Proper material cleaning, fit up, and safety are also introduced. (F, Sp, Su)

WELD 120 Structural Fabrication and Inspection
Semester Prerequisite: WELD 101
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 Structural Blueprint Reading for Welders
Semester Prerequisite: MATH 650
Basic Skills Prerequisite: Math Level 4
Blueprint and welding symbols are the universal language of the welding industry. It is developed for students, apprentices, technicians, and others who must develop the ability to read and accurately interpret blueprints. Teaches awareness of the advancements in metallurgy, welding processes, consumables and strict code enforcement used in industry today. (F)

WELD 194 Welding Project Lab
Semester Prerequisite: Departmental Approval
Further welding skills in maintenance welding, production welding, resistance welding, and/or tool and die welding, depending on the direction the student wishes to take his or her welding skills. (F, Su)

WELD 201 Tool and Die Welding
Semester Prerequisite: WELD 101, WELD 111, MACH 125
Theory and practice methods involved in welding various alloys, metals, preheating and postheating of metals, recognition of materials, allaying elements, and their effects. Also, the proper usage of air, oil, and water hardening steels. (F, Sp)

WELD 205 Pipe Welding
Semester Prerequisite: WELD 101, WELD 120
Theory, cutting, fit up, and practice on different sizes of pipe using shielded metal arc welding. Various 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 3G, 6G, and 6G positions. (F)

WELD 210 Aircraft Welding
Semester Prerequisite: Departmental 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 005 Writing Laboratory
Semester Prerequisite: None
WRIT 005 arranges the days and times when students will attend writing lab courses. Students must register for both a writing lab course and a section of WRIT 005. (F, Sp, Su)

WRIT 101 Writing Laboratory I
Semester Prerequisite: Departmental Approval
Basic Skills Prerequisite: Reading Level 1, Writing Level 1
Designed to teach fundamental writing skills and improve confidence and self-esteem. Provides a personal program combining one-to-one tutoring with directed practice. Requires enrollment in WRIT 005, which arranges times for laboratory attendance. (May repeat for credit three times.) (F, Sp, Su)

WRIT 102 Writing Laboratory II
Semester Prerequisite: Departmental Approval
Basic Skills Prerequisite: Reading Level 1, Writing Level 1
Designed to teach fundamental writing skills and improve confidence and self-esteem. Provides a personal program combining one-to-one tutoring with directed practice. Requires enrollment in WRIT 005, which arranges times for laboratory attendance. (May repeat for credit three times.) (F, Sp, Su)

WRIT 103 Writing Laboratory III
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 1, Writing Level 1
Designed to teach fundamental writing skills and improve confidence and self-esteem. Provides a personal program combining one-to-one tutoring with directed practice. Requires enrollment in WRIT 005, which arranges times for laboratory attendance. (May repeat for credit three times.) (F, Sp, Su)

WRIT 104 Writing Laboratory IV
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 1, Writing Level 1
Designed to teach fundamental writing skills and improve confidence and self-esteem. Provides a personal program combining one-to-one tutoring with directed practice. Requires enrollment in WRIT 005, which arranges times for laboratory attendance. (May repeat for credit three times.) (F, Sp, Su)

WRIT 110 Confidence in Writing
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 2, Writing Level 2
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 in this will have a writing skill level of 3. (F, Sp, Su)
WRIT 111 Writing Preparation I
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 3; Writing Level 5
Prepares students for Writing Preparation II by teaching students to see themselves as writers, to take responsibility for developing their writing and editing skills, and to use language skills interactively to support their writing projects. The classroom offers a supportive workshop environment; the lab offers individualized tutorial assistance with editing skills. (F, Sp, Su)

WRIT 114 Business English
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 4; Writing Level 5
This course is designed to review all parts of grammar, punctuation, and sentence structure. There will be special emphasis on usage of rules covering proper usage of punctuation, capitalization, possessives, number usage, plural and possessive forms for written business communication. Business English is required for major in business administration. (F, Sp, Su)

WRIT 117 Writing Preparation II
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 4; Writing Level 4
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 minimum writing skill level of 6. (F, Sp, Su)

WRIT 118 Personal Writing
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 5; Writing Level 6
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)

WRIT 119 Writing Skills Review
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 5; Writing Level 6
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 minimum writing skill level of 6. (F, Sp, Su)

WRIT 121 Composition I
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 5; Writing Level 6
The study and practice of expository and argumentative discourse to help students write more effectively. Emphasizes content development, organization, and style, and includes instruction in research methods and writing. Students will write summaries, reports, and analytical expository and argumentative essays. Some sections use word processing and networked computer classrooms. (F, Sp, Su)

WRIT 122 Composition II
Semester Prerequisite: 2.0 Minimum in WRIT 121
Basic Skills Prerequisite: Reading Level 5; Writing Level 6
Builds upon the writing skills developed in WRIT 121 to help students write arguments 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 word processing. (F, Sp, Su)

WRIT 124 Technical Writing
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 5; Writing Level 6
A college-level course in the study and practice of technical writing in a variety of formats for select audiences. Covers business letters, short reports, memos, formal reports, instructions, and contracts. Students learn basic research techniques. Students will work individually and collaboratively. (F, Sp, Su)

WRIT 127 Business Communications
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 5; Writing Level 6
College-level study of the theory and practice of business communication in a variety of formats, with emphasis on letters, memos, and written reports, including research-based reports. Also covers job applications and resumes, collaborative draft reports, and employment interviews. (F, Sp, Su)

WRIT 128 Business Report Writing
Semester Prerequisite: None
Basic Skills Prerequisite: Reading Level 5; 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, Sp)

WRIT 131 Honors Composition I
Semester Prerequisite: Departmental Approval
Basic Skills Prerequisite: Reading Level 5; Writing Level 7
Covers the same material as WRIT 121 but with additional work to challenge the superior writer. (F, Sp)

WRIT 132 Honors Composition II
Semester Prerequisite: Departmental Approval
Basic Skills Prerequisite: Reading Level 5; 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 word processing. (F, Sp)

WRIT 195 Writing User Documentation
Semester Prerequisite: None
Designed for data processing students and professionals. Teaches students to write effective documentation for users of computer systems. Focuses on writing step-by-step procedures explaining the responsibilities and activities of users. Emphasizes the clear, precise communication necessary for successful system operation and smooth work flow. (F, Sp)

WRIT 262 Proof Style
Semester Prerequisite: None
An advanced study of nonfictional 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, sentence, grammar, punctuation, and style. (Sp)

WRIT 269 Reviewing The Arts
Semester Prerequisite: WRIT 122/ENGL 122/Departmental Approval
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 281 Writing For Publication
Semester Prerequisite: None
Study of free-lance 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)

WRIT 282 Forum for Authors
Semester Prerequisite: None
An advanced course in free-lance writing for authors working or manuscripts. Students meet in a workshop setting to refine ideas, critique writing, solve problems, and develop material for submission to periodicals or book editors. Includes advanced study of effective writing techniques and market information. Occasional speakers. Word processing available. (Sp)

WRIT 285 Creative Writing I
Semester Prerequisite: None
WRIT 285 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 instructors in both fiction and poetry. (F, Sp)

WRIT 286 Creative Writing II
Semester Prerequisite: WRIT 285/Departmental Approval
Emphasizes improving the ability to write effective poems, short stories, and novels. Students select their own subjects and receive immediate responses through group discussion. (F)
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>WRIT 287</td>
<td>Writing Workshop</td>
<td>3</td>
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<td>Semester Prerequisite: Departmental Approval</td>
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<td>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)</td>
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<tr>
<td>WRIT 295</td>
<td>Independent study in Writing I</td>
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<td>Semester Prerequisite: Departmental Approval</td>
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<td>Individual projects in writing or journalism. Students will spend at least two hours a week for each credit in Independent study (F, Sp, Su)</td>
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<tr>
<td>WRIT 296</td>
<td>Independent study in Writing II</td>
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<td>Semester Prerequisite: Departmental Approval</td>
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<td>Individual projects in writing or journalism. Students will spend at least two hours a week for each credit in Independent study (F, Sp, Su)</td>
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**WRTR - WRITING RESTRICTED**

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<tbody>
<tr>
<td>WRTR 101</td>
<td>Writing Practice I</td>
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<td>Semester Prerequisite: Departmental Approval</td>
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<td>May be taken concurrently with other writing courses to provide extra individualized instruction and practice. Requires enrollment in WRIT 905, which arranges times for laboratory attendance. (May repeat for credit three times.) (F, Sp, Su)</td>
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<tr>
<td>WRTR 102</td>
<td>Writing Practice II</td>
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<tr>
<td>WRTR 103</td>
<td>Writing Practice III</td>
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<tr>
<td>WRTR 104</td>
<td>Writing Practice IV</td>
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<td>Semester Prerequisite: Departmental Approval</td>
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</table>
Special Courses
The following courses are generally not offered for enrollment by individual students. These courses are designed in cooperation with various organizations such as businesses, governmental agencies, schools, districts, labor organizations, or other groups to meet their special needs. For additional information, please contact the Community Services and Continuing Education Division at (517) 483-9800.

DESCRIPTIONS

CHEM 115 Environmental Issues of Japan
Semester Prerequisite: None
The course will include a discussion of several global environmental problems as they relate to Japan. Specific topics include air pollution, water pollution, solid waste management, the ozone layer, the greenhouse effect, nuclear energy, and disposal of radioactive wastes. (Su)

COOP 271 Cooperative Education MDOT I
Semester Prerequisite: MDOT Employees Only
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
Semester Prerequisite: MDOT Employees Only
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)

FIRE 290 Fire Officer Seminars
Semester Prerequisite: Certified Michigan Firefighter
This seminar consists of 18 individual weekend seminars leading to certification as Fire Officer I, II, III. These courses are presented by the National Fire Academy through the auspices of the Michigan Fire Fighter's Training Council. (F, Sp)

FIRE 291 Fire Officer Seminars
Semester Prerequisite: Certified Michigan Firefighter
This seminar consists of 18 individual weekend seminars leading to certification as Fire Officer I, II, and III. These courses are presented by the National Fire Academy through the auspices of the Michigan Fire Fighter's Training Council. (F, Sp)

FIRE 292 Fire Officer Seminars
Semester Prerequisite: Certified Michigan Firefighter
This seminar consists of 18 individual weekend seminars leading to certification as Fire Officer I, II, and III. These courses are presented by the National Fire Academy through the auspices of the Michigan Fire Fighter's Training Council. (F, Sp)

FIRE 293 High Angle Rescue
Semester Prerequisite: FIRE 101/Firefighter
A hands-on seminar for fire department members who desire to participate in high angle rescue operations. Equipment is provided for the class. (F, Sp, Su)

FIRE 294 Tactical and Heavy Rescue Operations
Semester Prerequisite: Firefighter/Police Officer/EMS
Tactical rescue encompasses low angle trench and confined space rescue elements. This seminar is hands-on. Adherence to safety requirements is stressed. (F, Sp, Su)

FIRE 295 Hazardous Materials Awareness Level
Semester Prerequisite: None
This course is OSHA required training for first responders. The course is designed to heighten the awareness of emergency personnel to the potential dangers of a hazardous materials incident in their community. (F, Sp, Su)

FIRE 296 Hazardous Materials Operations Level
Semester Prerequisite: FIRE 295
This course is designed to comply with OSHA training requirements on hazardous materials as defined in 29 CFR 1910.120 and to create further awareness regarding the dangers of responding to a Haz-Mat incident. (F, Sp, Su)

FIRE 297 Hazardous Materials Air Monitoring
Semester Prerequisite: FIRE 296
This seminar addresses advanced techniques in air monitoring at hazardous material emergency sites for the operational level practitioner. (F, Sp, Su)

FIRE 298 Confined Space Rescue
Semester Prerequisite: FIRE 297/Firefighter
The Confined Space Rescue emphasizes practical techniques and considerations when effecting rescue from vessels, sewers, tanks, and other confined areas. This seminar is hands-on. Adherence to safety requirements is stressed. (F, Sp, Su)

HMFS 170 Menu Design and Layout
Semester Prerequisite: None
This course includes the basics in menu planning, analysis, and pricing. Menu layout and design fundamentals are covered, and the integration of the menu into the operational aspects of purchasing, production, and service is explored. Project required. (F, Su)

HMFS 177 Introduction to Hotel and Food Service Operations
Semester Prerequisite: None
An introduction to the hotel-motel-food service industry. Its management departments and responsibilities, designed specifically for Japan Adventure Horizon students. (F, Sp, Su)

HMFS 180 Japan Adventure Internship
Semester Prerequisite: None
Attend morning meeting each working day. Perform work duties as assigned by the student supervisor(s) and the host company. (F, Sp, Su)

HMFS 181 Japan Adventure Internship
Semester Prerequisite: None
Attend morning meeting each working day. Perform work duties as assigned by the student supervisor(s) and the host company. (F, Sp, Su)

HMFS 183 Practicum in Japanese Culture
Semester Prerequisite: Program Approval
Introducing the principles and philosophy of Japanese calligraphy and the use of abacus and understanding of various types of Japanese traditional dreeses. Practical training in calligraphy and abacus. (F, Sp, Su)

HMFS 185 Practicum in Japanese Culture
Semester Prerequisite: Program Approval
Introducing the principles and philosophy of Japanese calligraphy and the use of abacus and understanding of various types of Japanese traditional dreeses. Practical training in calligraphy and abacus. (F, Sp, Su)

HUMS 125 Japan: Past and Present
Semester Prerequisite: None
This course traces the development of Japan's tradition with strong emphasis on history, religion, and literature. Further, this course demonstrates that modern Japan can best be understood in light of its distinctive traditions. (Sp)

HUMS 214 Heating, Ventilating, and Air Conditioning Seminar
Semester Prerequisite: None
Seminar may cover any or all of the following topics: cooling, heating, humidifying, filtering, serving and/or ventilating, etc. For individuals already in the heating, ventilating, air conditioning, and refrigeration (HVACR) field, or anyone interested in those areas. (F, Sp, Su)

MDCR 224 Introduction to Negotiating Skills
Semester Prerequisite: None
Certain basic negotiating skills can be applied to a number of different situations both business and personal, this training will focus on strategies for conducting negotiation sessions with employees, customers, and suppliers. It will not cover strategies for negotiating union contracts. (F, Sp, Su)

MDCR 252 Supervisory Skills Training
Semester Prerequisite: None
This seminar is an eight-hour program that will address the basic concepts and skills for new supervisors in addition to providing some self-assessment. (F, Sp, Su)

MDCR 281 Dealing With Difficult People
Semester Prerequisite: None
Difficult people create problems! In this practical seminar participants will observe and practice effective strategies for handling difficult people. Participants will be able to reduce the problems difficult people create. (F, Sp, Su)
MDCS 270  Management II  1.75
Semester Prerequisite: None
Management II is a four-day course for supervisors with limited or no experience. It focuses on the special needs of transition into management and fundamental concepts and issues needed when someone becomes a supervisor. Further, it gives participants an opportunity to learn from each other about special concerns and how to handle various management problems. (F, Sp, Su)

MDCS 271  Management III  1.75
Semester Prerequisite: None
Management III is a four-day course for experienced managers. It concentrates on skills necessary to build and supervise more effective work groups through participative management. (F, Sp, Su)

MDCS 272  Management IV  1.75
Semester Prerequisite: None
Management IV is a four-day course for experienced managers. It examines group dynamics and processes and synergistic functioning; provides techniques for organizational development, for improving organization climate, and for attaining organizational goals; emphasizes group decision-making, problem solving, project management, and team building. (F, Sp, Su)

POLS 280  Politics and Government of Japan  3
Semester Prerequisite: None
An introduction to the Japanese governmental structures and political process, with emphasis on the unique characteristics of Japanese political culture, Japanese style of decision-making, and Japanese concepts of democracy. (F, Sp)

OSEM 005  Quality Assurance Seminar  0.5
Semester Prerequisite: None
Seminar content is dependent upon course requirement. (F, Sp, Su)

OSEM 110  Quality Assurance Seminar  1
Semester Prerequisite: None
Seminar content is dependent upon course requirement. (F, Sp, Su)

OSEM 115  Quality Assurance Seminar  1.5
Semester Prerequisite: None
Seminar content is dependent upon course requirement. (F, Sp, Su)

OSEM 120  Quality Assurance Seminar  2
Semester Prerequisite: None
Seminar content is dependent upon course requirement. (F, Sp, Su)

OSEM 125  Quality Assurance Seminar  2.5
Semester Prerequisite: None
Seminar content is dependent upon course requirement. (F, Sp, Su)

OSEM 130  Quality Assurance Seminar  3
Semester Prerequisite: None
Seminar content is dependent upon course requirement. (F, Sp, Su)

OSEM 131  Quality Assurance Seminar  3.75
Semester Prerequisite: None
Seminar content is dependent upon course requirement. (F, Sp, Su)

OSEM 135  Quality Assurance Seminar  3.5
Semester Prerequisite: None
Seminar content is dependent upon course requirement. (F, Sp, Su)

OSEM 140  Quality Assurance Seminar  4
Semester Prerequisite: None
Seminar content is dependent upon course requirement. (F, Sp, Su)

OSEM 145  Quality Assurance Seminar  4.5
Semester Prerequisite: None
Seminar content is dependent upon course requirement. (F, Sp, Su)

RSEM 120  Resource and Operations Management Systems Seminar  2
Semester Prerequisite: None
Course content varies with seminar. (F, Sp, Su)

SOCL 280  Introduction to Japanese Culture  3
Semester Prerequisite: None
An introduction to contemporary Japan in its cultural context. Emphasis is on the unique features of the Japanese way of life in terms of Japanese values, social system, and cultural background. (F, Sp)

SPAN 180  Seminar: Spanish for Hermandad  3
Semester Prerequisite: SPAN 116 or Successful Score on Spanish Placement Test
Designed for persons who have knowledge of Spanish, and wish to develop conversational as well as reading skills in the language. Students learn practical vocabulary and essential grammar for expressing themselves in Spanish. They become familiar with different aspects of the Hispanic culture through readings, informal lectures, and audiovisual presentations. (F, Sp, Su)
ABDO, Saide
Director, Public Safety
A.G., Lansing Community College

AHMED, Khadija
Instructor, Math/Science
B.S., Michigan State University; M.S., Bowling Green State

ALFARO, Rogelio R.
Associate Professor-Counselor, Counseling Services
B.A., Michigan State University; M.A., Michigan State University

ALLEN, Richard L.
Director, Administrative Applications, Information Technology and Planning
A.B., Lansing Community College; B.A., Cleary College

AZIMA, Alex M.
Professor, Science
B.S., Massachusetts Institute of Technology; M.S., Michigan State University

BALDWIN, Robert L.
Professor, Continuing Professional Education
B.A., Michigan State University

BARCELÓ, Doreen D.
Professor, Business Careers
B.S., Michigan State University; M.A., Michigan State University

BARKS, Kay E.
Professor, Math and Computer Science
B.S., Michigan State University; M.S., Michigan State University

BARNETT, Dorothy P.
Associate Professor, Technology Careers
B.A., Nazareth College; M.A., University of Notre Dame

BECK, Norman A.
Professor, Humanities and Performing Arts
B.A., University of Rhode Island; M.A., University of Rhode Island; Graduate Study, Michigan State University

BECK, Stephen
Assistant Professor, Technology Careers
B.A., University of New Hampshire

BELKIN, Andria H.
Coordinator, Counseling, Counseling Services
B.A., Michigan State University; M.S.W., Michigan State University

BELL, Vanessa
Assistant Director, Financial Aid
B.B.A., Detroit College of Business

BENDER, Kathleen
Lab Technician, Technology Careers
A.A., Lansing Community College

BENEDICT, Martha A.
Coordinator, Community Education and Services
B.A., University of Michigan; M.A., Specialist in Aging Certificate, University of Michigan

BENNITT, Catharine
Professor, Human, Health and Public Service Careers
B.S., University of Wisconsin; M.S., University of Wisconsin

BENTLEY, Robert H.
Interim Director of Instruction, Student and Academic Support
B.A., Pacific University; M.A., Pacific University; Graduate Study, University of Nevada

BERGERON, Jack
Associate Professor, Technology Careers
B.F.A., Michigan State University; M.A., Central Michigan University

BERGERON, Pamela
Human Resources Development Strategist
A.A., Ferris State College; B.S., Ferris State College; M.A., Aquinas College

BETTINSON, Charles H.
Dean, Community Services and Continuing Education
B.S., Central Michigan University; M.A., Central Michigan University; Ph.D., Michigan State University

BHUGRA, Sunita Singh
Professor, Social Science
B.T., Panjab University; M.Ed., Panjab University; M.A., Panjab University; Ed.D., Utah State University

BLANCHARD, William G.
Professor, Technology Careers
B.A., Michigan State University; M.A., University of Southern California

BLATTERM, Susan D.
Director, Accounting and Payroll
B.S., Central Michigan University; B.A., Central Michigan University

BOLMAN, James A.
Director, Business Services
B.A., St. Louis University; 11-A Insurance Certificate, Michigan State University; Graduate Study, Assumption College and Seminary, Chaska, Minn.

BOUCK, Robert J.
Assistant Professor, Business Careers
A.A., Lansing Community College; B.A., Michigan State University; M.A., Michigan State University

BOUTH, Charles
Assistant Professor, Human, Health and Public Service Careers
A.S., Lansing Community College; B.S., Michigan State University; M.S., Michigan State University; Ed.S., Michigan State University

BREAMER, George R.
Coordinator, Academic Affairs, Liberal Studies
A.B., Drury College; M.A., University of Notre Dame; Ph.D., University of Notre Dame

BREAMER, Jennifer
Associate Professor, Counseling Services
B.A., Central Michigan University; M.A., Central Michigan University; Ph.D., Michigan State University

BROWNE, Brenda
Assistant Professor, Human, Health and Public Service Careers
B.A., College of Arts and Sciences; B.S., Western Michigan University

BROWNE, Mary H.
Professor, Math/Science
B.S., Central Michigan University; M.S., Central Michigan University

BURGIS, Kathy
Instructor, Math/Science
B.S., Michigan State University; M.A.T., Michigan State University

BURRE, Theodore
Professor, Technology Careers
A.A., Alpena Community College; B.A., Michigan State University

BUSSECK, Gertrude
Professor, Science
B.A., Rutgers University; M.A., University of Illinois; Ph.D., Ohio State University

BUTTNERMAN, Geraldine
Professor, Science
B.A., Calvin College; M.A., University of Michigan

BYRNE, Deborah D.
Coordinator, Humanities and Performing Arts
B.A., University of Virginia; M.S., Southern Oregon State College; Ph.D., Utah State University

CAMPBELL, Magnus
Instructor, Science
M.S., University of Virginia; M.S., Southern Oregon State College; Ph.D., Utah State University

CANSFIELD, John H.
Director, Student Relations, Student and Academic Services Division
B.A., Michigan State University; M.A., Michigan State University; Ed.D., Western Michigan University

CARADINE, Bruce W.
Co-Director, Physical Plant
B.S., Central Michigan University; M.A., Central Michigan University

CARLISLE, Harold R.
Transportation Training Specialist, Technology Careers

CARLSON, Stephen C.
Associate Professor, Science
B.A., Western Michigan University; Ph.D., Purdue University

CAROL, Mary M.
Associate Professor, Humanities and Performing Arts
B.F.A., University of Montana; M.A., Columbia University

CARPENTER, Trudy G.
Instructor, Language Skills
B.A., Michigan State University; M.A., Northeastern Illinois University

CARTWRIGHT, Brenda
Associate Professor, Human, Health and Public Service Careers
B.S., Ball State University; M.S., Indiana University

CHARAVALLI, Trudy K.
Professor, Business Careers
B.A., University of Michigan; M.B.A., Michigan State University
HAMILTON, Kenneth C.
Associate Professor, Social Science
B.A., Western Michigan University; M.A., Western Michigan University

HANEY, Deanna K.
Chair, Humanities and Performing Arts
B.A., University of Kansas; M.A., San Francisco State University; Ph.D., University of Michigan

HANIESKI, Deanna D.
Professor, Technology Careers
B.S., State College at Bridgewater; M.S., Purdue University

HANLEY, John
Professor, Technology Careers
B.A., Michigan State University; M.B.A., Michigan State University

HANSON, Arthur M.
Instructor, Technology Careers
B.S., Louisiana State University; B.J., University of Missouri; M.A., University of Minnesota

HARD, Mary Jo
Associate Professor, Physical Fitness and Wellness
A.D., Delta College; B.S., Michigan State University; M.A., Michigan State University

HARNESS, Lynne
Director, College Academic Affairs, Executive Office
B.S., Central Michigan University; M.A., Michigan State University; Ph.D., Michigan State University

HARRIS, Denise E.
Director, Student Life, Instructional and Student Support
B.A., Michigan State University

HARRIS, Marvin
Assistant Professor, Business Careers
B.S., Coppin State University; M.A., Morgan State University

HARRIS, Reginald N.
Lab Technician, Technology Careers
A.A.S., Lansing Community College

HARTON, Carol A.
Assistant Professor, Human, Health and Public Service Careers
B.S., Michigan State University

HARTWIG, Joan E.
Professor-Counselor, Entry Services
B.S., Michigan State University; M.A., Michigan State University

HAYNER, David A.
Transportation Training Specialist, Technology Careers

HAYS, Patricia
Professor, Continuing Professional Education
B.S.N., Michigan State University; M.S., Wayne State University

HEARNS, John W.
Assistant Director, Entry Services
B.S., Alcorn State University; M.A., Michigan State University

HEISLER, Gary
Professor, Business Careers
A.B., Lansing Community College; B.S., Manchester College; M.A.T., Michigan State University

HERDER, Dale M.
Professor, Language Skills
A.A., Muskegon Community College; B.A., Michigan State University; M.A., Michigan State University; Ph.D., Michigan State University

HICKEY, Terry
Director, LCC Foundation
B.A., Indiana University; M.A., Michigan State University

HILL, Gilbert M.
Associate Professor-Counselor, Entry Services
A.A., Lansing Community College; B.S., Michigan State University; M.A., Michigan State University

HINES, Arlene
Assistant Professor, Technology Careers
B.A., Michigan State University

HOLT, Daniel T.
Instructor, Communication
B.A., California State College; M.A., Regent University

HOPKINS, Howard S.
Professor, Language Skills
B.A., Michigan State University; M.A., Michigan State University; Graduate Study, Michigan State University

HOVEY, Kathleen
Instructor, Continuing Professional Education
A.A., Lansing Community College

HOWELL, Richard N.
Associate Professor, Business Careers
B.S., Manchester College

HUDSON, Cathie
Associate Professor, Business Careers
A.A., Lansing Community College; B.A., Eastern Michigan University; M.A., Michigan State University

HUGHEY, Patricia M.
Associate Professor, Science
B.S., State University College of New York; M.S., Michigan State University

HURST, Granville W.
Assistant Professor, Technology Careers
A.D., Lansing Community College; B.A., Michigan State University

IDALSKI, Robert L.
Professor, Technology Careers
A.S., Alpena Junior College; B.S., Michigan State University; M.A., Michigan State University

INGRAM, Michael L.
Instructor, Physical Fitness and Wellness
A.D., Lansing Community College

INMAN, Thomas
Assistant Professor, Technology Careers
A.A.S., Ferris State College; B.A., Western Michigan University

IVENS, Ruby
Assistant Professor, Technology Careers
B.S., Western Michigan University; M.A., Western Michigan University; Ph.D., Western Michigan University

JACOT, Gene F.
Professor, Technology Careers
B.S., Michigan State University; Graduate Study, Michigan State University

JONES, Clint
Teaching Technician, Technology Careers
A.S., Lansing Community College

JONES, J. Howard
Professor, Mathematics
B.S., Illinois State University; M.A.T., Michigan State University; M.S., Michigan State University; Ph.D., Michigan State University

JULIANO, Anthony J.
Training Grant Coordinator, Contracted Training and Services
B.A., Michigan State University; M.A., Michigan State University

KENDRICK, Mary Lou
Assistant Professor, Social Science
B.A., Marquette University; M.M., University of Wisconsin; Ph.D., University of Wisconsin

KESSELER, Thomas J.
Coordinator, Budget and Grants Management, Administrative Services
A.B., Lansing Community College

KIDDER, Sandra T.
Administrative International Assistant, Counseling Services
B.S., Michigan State University; M.A., Western Michigan University

KIM, Tai Sung
Director, International Programs
B.S., Seoul National University; M.A., Michigan State University; Ph.D., Michigan State University

KLOECKNER, Gerald J.
Director, Financial Services, Administrative Services
B.A., Michigan State University; M.M., Aquinas College

KNAPP, Jane
Instructor, Technology Careers
B.A., Michigan State University; M.S., University of Texas at Dallas

KNIPPENBERG, Gary P.
Interim Dean, Liberal Studies
B.S., Concordia College; M.A., University of Missouri; Ph.D., Michigan State University

KUGEL, Richard L.
Instructor, Technology Careers
B.S., Western Michigan University

LAFAYE, Daniel C.
Professor-Counselor, Counseling Services
B.S., Central Michigan University; M.S., Michigan State University; Advanced Graduate Study, Michigan State University

LAMBERT, Patricia L.
Program Director, Nursing, Human, Health and Public Service Careers
B.S.N., College of St. Catherine; B.S., Tomtorn College; M.A., Michigan State University

272  LANSING COMMUNITY COLLEGE 1997–98
LARSON, Barbara A.  
Vice President, Administrative Services and Finance  
B.S., Rutgers University; M.A., University of Wisconsin

LEW, Dwight A.  
Assistant Professor, Technology Careers  
A.A., Lansing Community College; B.F.A., Northern Michigan University;  
B.S., Rochester Institute of Technology

LEE, Alberta  
Assistant Director of Human Resources  
B.B.A., Saginaw Valley State University; M.S., Central Michigan University

LESTER, Marsha  
Director, Special Projects, Marketing, Community, and Board Relations  
A.A., Lansing Community College

LEWIS, David M.  
Transportation Training Specialist/Maintenance, Technology Careers

LIBBY, Teresa  
Professor, Human, Health and Public Service Careers  
B.S.N., Michigan State University; M.S., University of Michigan

LIETZ, Irene A.  
Grants Coordinator, Executive Office  
B.A., Marygrove College; M.A., University of Detroit

LIGHTNER, John W.  
Associate Professor, Technology Careers  
A.A. and A.S., Lansing Community College; B.S., Ferris State College; M.S.,  
Ferris State University

LIU, Lily Pao H.  
Associate Professor, Technology Careers  
B.F.A., California College of Arts and Crafts

LOMBARDI, Nancy  
Director/Instruction, Careers Division  
B.A., City University of New York; M.A., Michigan State University

LUGNISLAND, William  
Assistant Professor, Technology Careers  
B.S., Michigan State University

LYLE, Barbara  
Coordinator, Student Employment, Career and Employment Services  
B.S., Western Michigan University

MAAR, Allan R.  
Professor, Language Skills  
B.S., State University of New York; M.A., Michigan State University; Graduate  
Study, Michigan State University

MACKENZIE, Kenneth F.  
Co-Director, User/Technical Services, Information Technology and  
Planning  
B.S., Fordham University; M.S., Michigan State University

MADISON, Sally K.  
Professor, Language Skills  
A.A., Muskegon Community College; B.A., Wheaton College; M.A., Michigan  
State University; Specialist's Certificate, Michigan State University

MAIJOORY, Saad  
Howell Center Coordinator, Extension and Community Education  
B.S., Ataturk University, M.Sc., Michigan State University; Ph.D., Michigan  
State University

MARINEZ, Rafael  
Assistant Director, Financial Aid  
B.A., Michigan State University

MARTIN, William T.  
Coordinator-Police Academy, Continuing Professional Education

MASTERS, Madeleine M.  
Interim Director, Academic Affairs, Liberal Studies  
B.A., College of Mt. St. Vincent; M.A.T., Purdue University

MATTISON, David  
Teaching Technician, Technology Careers  
A.A.S., Lansing Community College

MATTISON, Morton E.  
Associate Professor, Math/Science  
B.S., Central Michigan University; M.A.T., Michigan State University;  
Graduate Study, Cornell University

McALEER, John T.  
Professor, Language Skills  
B.A., Michigan State University; M.A., Michigan State University

McCrea, Bruce  
Professor, Social Science  
A.B., Miami University of Ohio; M.Phil., Yale University

McENaney, Stephen A.  
Director, Contracted Training and Services  
A.A., Lansing Community College; B.A., Michigan State University; M.A.,  
Michigan State University

MCKEE, Richard G.  
Instructor, Technology Careers  
B.S., University of Michigan

McMILLER, Queen E. Foreman  
Director, Equal Opportunity and Diversity Programs  
B.S., Illinois State University

MEEKER, Connie J.  
Professor, Human, Health and Public Service Careers  
B.S.N., University of Delaware; M.S., University of Arizona

MEIER, Dennis E.  
Professor, Social Science  
B.A., Michigan State University; M.A., Michigan State University

MELOCH, Ronald A.  
Professor, Technology Careers  
B.A., Michigan State University; M.A., Michigan State University

MENEFEE, Eva M.  
Lab Technician, Counseling Services  
B.A., Michigan State University

MIANK, Timothy A.  
Professor, Language Skills  
B.A., Grand Valley State College; M.A., Michigan State University

MILLS, Maria C.  
Professor, Humanities and Performing Arts  
School of Voice and Dance of Spain

MILTON, Kirby M.  
Title IX/PAWS Director, Executive Office  
B.F.A., Michigan State University; M.A., Michigan State University

MIRKIL, Dorothy J.  
Associate Professor, Human, Health and Public Service Careers  
H.N. Mackley Hospital School of Nursing; B.S., Michigan State University;  
M.S.N., Wayne State University; M.A., Michigan State University

MITCHELL-COLES, Tammy L.  
Assistant Professor-Counselor, Counseling Services  
B.A., Kentucky State University; M.A., Michigan State University; Doctoral  
Candidate, Michigan State University

MOHAMEDULLA, Abul  
Assistant Professor, Technology Careers  
B.S.E.E., University of India; M.S.E.E., Oklahoma State University; M.S.E.E.,  
University of Michigan

MORAN, James E.  
Lab Technician, Counseling Services  
B.S., Northern Michigan University; M.P.A., Western Michigan University

MORCIGLIO, Jean F.  
Director, Extension and Community Education  
A.A., Mott Community College; B.A., Michigan State University; M.S.  
Ferris State University

MORROW, Addie J.  
Professor-Counselor, Counseling Services  
B.S., Eastern Michigan University; M.A., Western Michigan University

MORSE, Dennis H.  
Program Director, Criminal Justice-Continuing Education, Continuing  
Professional Education  
B.S., Michigan State University; M.A., Michigan State University

MORTENSON, Catherine  
Coordinator, Instructional Services  
B.S., Andrews University

MOWT, William  
Professor, Business Careers  
B.A., Michigan State University; M.B.A., Michigan State University

MULL, Richard D.  
Athletic Director, Instructional and Student Support  
B.A., Michigan State University; Graduate Study, Michigan State University

NELSON, Richard B.  
Assistant Professor, Social Science  
B.S., Central Michigan; M.A., Michigan State University

NEVIL, James W.  
Professor, Physical Fitness and Wellness  
M.A., Magyar Testnevelési Főiskola; Graduate Study, Michigan State University

NILSSON, Carl J.  
Coordinator, Transportation/Airframe and Powerplant, Technology  
Careers

LANSING COMMUNITY COLLEGE 1997-98 ♦ 273
ROESER, Robert  
Instructor, Technology Careers

ROGERS, Melanie A.  
Director, New Application Development, Information Technology and Planning  
B.S., Central Michigan University; M.S., Central Michigan University

ROOT, Roscoe B.  
Professor, Science  
B.S., Central Michigan University; M.S., University of Chicago

ROSE, Janice  
Coordinator, Accounting and Payroll

ROTMAN, Jack W.  
Professor, Math/Science  
B.S., Michigan State University; M.A., Michigan State University

ROUSH, Ronald E.  
Director, Operational Services, Administrative Services  
B.S., Michigan State University; M.S., Michigan State University

RUSSELL, Eugene N.  
Professor, Technology Careers  
B.S., Michigan State University; M.S., Michigan State University; Graduate Study, Michigan State University and Oklahoma State University

RYSZTAK, Marcia  
Associate Professor, Human, Health and Public Service Careers  
B.A., Michigan State University; M.A., Michigan State University

SAND, Ruth A.  
Professor, Business Careers  
B.A., Michigan State University

SAWYER-BURLESON, Suzanne L.  
Instructor, Reference Librarian, Instructional and Student Support  
B.A., Southern Illinois University M.S., Wayne State University

SCHWAB, Martha  
Acting Director, Consultation Training, Information Technology and Planning

SCOTT, James F.  
Professor-Counselor, Entry Services  
Certificate, Advanced Emergency Medical Technology, Lansing Community College; B.S., Michigan State University; M.A., Michigan State University; Graduate Study, Michigan State University

SEELYE, Allan  
Transportation Training Specialist, Technology Careers

SEPULVEDA-VAZQUEZ, Gloria  
Professor, Reference Librarian, Instructional and Student Support  
B.A., University of Puerto Rico; M.A., Michigan State University; M.A.L.S., University of Michigan

SHAFFER, Marian  
Professor, Business Careers  
B.A., University of Northern Iowa; M.A., Michigan State University; Ph.D., Michigan State University

SHAR, Vikram  
Professor, Business Careers  
S.E., Gujarat University; B.S., University of Michigan; M.B.A., Michigan State University

SHEETS, Donald  
Instructor, Technology Careers  
A.S., Lansing Community College; B.S., Ferris State University

SHULMAN, Bennett D.  
Professor, Business Careers  
B.S., Syracuse University; J.D., Temple University

SJOQUIST, Douglas P.  
Associate Professor, Humanities and Performing Arts  
B.A., Northern Michigan University; M.A., University of Hawaii; Doctoral Candidate, Monighan State University

SMITH, Deleski  
Coordinator, Business Development Center, Contracted Training and Services  
A.B., Lansing Community College

SMITH, John Dale  
Director, Conference Services/Interim Chair, Physical Fitness and Wellness  
B.M., Bowling Green State University; M.M., Michigan State University

SMYDRA, Stanley  
Instructor, Technology Careers  
B.S., Michigan State University

SMYTH, Marc  
Coordinator, Telelearning Services, Instructional and Student Support  
A.B., Lansing Community College

SOMERS, Maribeth  
Assistant Professor, Nursing, Human, Health and Public Service Careers  
H.N., Lansing Community College; B.S.N., University of Michigan-Flint; M.S.N., Michigan State University

SPANGLER, Jerry L.  
Professor, Technology Careers  
B.S., Siena Heights College

SPINICICH, Vicki  
Assistant Professor, Human, Health and Public Service Careers  
A.A.S., Ferris State College

STARK, Judith D.  
Project Coordinator/Tech Prep, Careers Division  
B.A.S., Siena Heights College

STEARNS, Barry G.  
Professor-Counselor, Counseling Services  
B.A., University of Florida; M.Ed., University of Florida

STEFFENS, David B.  
Director, Operations and College Technical Support, Information Technology and Planning  
A.B., Lansing Community College; B.A., Davenport College

STEWART, M. James  
Professor, Math and Computer Science  
B.A., Michigan State University; M.S., Michigan State University; Ph.D., Michigan State University

STIMSON, Rebecca J.  
Activity One Coordinator, Title III, Executive Office  
B.A., Michigan State University; Graduate Study, Michigan State University

SULLIVAN, Ellen  
Director, Community Education and Services  
B.A., Seton Hill College; M.S.W., University of Michigan; Specialist in Aging Certificate, University of Michigan; Ph.D., University of Texas Austin

SYKES, Abel B., Jr.  
President  
B.A., University of Missouri; M.A., University of Missouri; Ed.D., University of California; Certificate, Harvard Business School

TENNIS, Gayland L.  
Program Director, Transportation/Aviation, Technology Careers  
B.A., Michigan State University; M.A., Central Michigan University

THEROUX, John  
Program Director, Transportation/Truck Driver Training, Technology Careers  
B.S., Murray State University

THOMAS, Carol M.  
Assistant Professor, Human, Health and Public Service Careers  
B.A., GraceLand College

THOMAS, Morris O.  
Professor, Social Science  
B.S., Northwestern Michigan College; M.A., Michigan State University

THOMAS-GILKEY, Bettye  
Instructor-Counselor, Counseling Services  
A.A., Kellogg Community College; B.A., Spring Arbor College; M.A., Central Michigan University

THOMMEN, John  
Associate Professor, Information Technology and Planning  
A.A.S., Ferris State College; B.S., Ferris State College

TOOMEY, Robert L.  
Associate Professor, Technology Careers  
A.A., Lansing Community College; F.A.A., A. and P. License, Alabama Institute of Technology

TRAN, Loi N.  
Coordinator, Limited English Proficiency Services, Counseling Services  
B.S., University of Salion; M.S., University of Salion; D.S.C., University de Marseille (France)

TROSTY, Franca  
Associate Professor, Technology Careers  
B.A., Hunter College, CUNY; M.F.A., Michigan State University

TURCOTTE, Patrick C.  
Professor, Contracted Training and Services  
A.S., Lansing Community College; B.S., Central Michigan University

TURNER, F. Ray  
Interim Director, Financial Services/Communication, Liberal Studies  
B.A., Michigan State University

VANKENPEN, Gary  
Interim Director, Human Resources, Liberal Studies  
B.A., Hope College; Ph.D., Michigan State University

LANING COMMUNITY COLLEGE 1997-98  275
VOSSLER, Stephen L.
Assistant Professor, Technology Careers
B.S., Michigan State University

WALCZAK, Patricia J.
Assistant Professor, Business Careers
A.B., Lansing Community College; B.A., Michigan State University

WALKER, Rosalie
Director, Human Resources/Communication, Careers Division
R.N., St. Lawrence Hospital School of Nursing; B.A., Spring Arbor College

WALLACE, Francis T.
Professor, Business Careers
A.A., St. Petersburg Junior College; B.A., University of South Florida, M.A., University of South Florida; Ph.D., Michigan State University

WANG, Jing Ling
Instructor, Math/Science
B.S., Beijing Teachers University; M.S., Michigan State University; Ph.D., University of North Texas

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

WASHINGTON, John
Assistant Professor, Technology Careers
B.S., Wayne State University

WAWRO, Raymond W.
Director, Information Technology and Planning
B.S., Michigan State University

WELCH, Robert
Assistant Professor, Technology Careers
Certificate, Michigan State University

WELSH, Jean
Instructor, Community Education and Services
B.S., Michigan State University; M.A., Michigan State University

WHITEHEAD, Harry
Associate Professor, Technology Careers
A.A., Western Michigan University; A. and P. License, Western Michigan University; B.S., Western Michigan University

WILLIAMS, Deborah
Interim Chairperson, Language Skills
B.A., Michigan State University; M.A., Michigan State University

WIMBISH, Jennifer B.
Dean, Student and Academic Support
B.S., Hampton University; M.A., Texas A & M University

WOMBOLOT, David H.
Director, Computer Operations, Information Technology and Planning
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, Business Careers
B.B.A., Northwood University

ZIEGENHAGEN, Steven P.
Instructor, Technology Careers
B.S., Western Michigan University

ZIMMERMAN, Dan H.
Assistant Director, Financial Aid
B.A., Michigan State University; M.A., Michigan State University

ZUGG, Mark R.
Assistant Professor, Reference Librarian, Instructional and Student Support
B.A., Wayne State University; M.A., University of Michigan; M.A.L.S., University of Michigan
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Index and Maps
INDEX

A
Academic
    Advising ................................................................. 6, 32
    Calendar ...................................................................... 17
    Definitions .................................................................... 17
    Academic Information
        Academic Standing Policies ...................................... 18–19
        Credit/No-Credit Grading ........................................... 18
        Definitions ................................................................ 18
        Grade Changes .................................................................. 18
        Grade Point Average, Computing ................................. 18
        Grade Reports ................................................................ 18
        Grading Systems .......................................................... 18
    Academic Standing Policies/Grading System .................. 18–19
    Table for Determining .................................................... 48–50
    Accounting, Course Descriptions .................................... 168–169
    Accountant (see Accounting; Accounting, C.P.A. Exam Preparation)
    Accounting (see also Accounting; C.P.A. Exam Preparation; Managerial Accounting; Pre-accounting) ................. 16
    C.P.A. Exam Preparation .................................................. 49
    Acting (see Theater-Acting Transfer) ............................... 16
    Admissions Information
        Appeal of Denial .......................................................... 16
        Application, Procedures for Completing ........................ 16
        Basic Skills Assessment and Advising ........................... 16
        Criteria, General .......................................................... 16
        Dual Enrollment Program .............................................. 16
        Financial Aid Information .............................................. 16
        Guest Applications .......................................................... 16
        International Applicants ................................................ 16
        Procedures, General ....................................................... 16
        Selective Admission Programs ....................................... 16
    Special Admission Programs .............................................. 9
        Special Program/Special Circumstances .......................... 9
        Administrative Assistant .................................................. 9
        Administrative Support (see Administrative Assistant) ...... 9
        Advanced Microcomputer Application Specialist ............. 76
        Advanced Placement Examinations ................................ 20
        Aerospace Studies, Course Descriptions ........................ 169
        Alcohol Regulations ..................................................... 25
        African American History .............................................. 36–42
        Aging Services (see Gerontology) ..................................... 37
        Air Conditioning (see Heating and Air Conditioning; Heating, Air Conditioning and Refrigeration) .................. 175
        Air Conditioning Repair (see Heating and Air Conditioning) 175
        Aircraft Maintenance (see Airframe Maintenance Technology; Powerplant Maintenance Technology) .............. 175
        Aircraft Mechanics (see Airframe Maintenance Technology; Powerplant Maintenance Technology) .................... 175
        Airframe Maintenance Technology .................................. 61
        Airline Operations (see Tourism: Airline and Travel Agency Operations) .................................................. 175
        Alcohol Abuse (see Substance Abuse) ............................. 175
        Allied Health
            Course Descriptions .................................................. 175
        American Institute of Banking: Lansing Area, Course Descriptions .......................................................... 175
        American Sign Language (see Sign Language Interpreter) ........................................................................ 175
        American Studies ........................................................... 36–42
        Anatomy, Course Descriptions ........................................ 37
        Animation (see Computer Graphics-Animation) ............... 170
        Anthropology, Course Descriptions ................................. 170
        Apartment Maintenance (see Building Maintenance) ....... 170
        APE (see Advanced Placement Examinations) .................. 170
        Appeals, Student ............................................................ 27–28
        Applied Degrees and Certificates, List of .......................... 47
        Applied Technology (see General Technology) ................. 47
        Aquatics, Course Descriptions ......................................... 242
        Architecture, Course Descriptions ................................... 170–173
        Architectural Drafting Design (see Architectural Tech, Graphics Option; Architectural Technology, Core Option) .... 170–173
        Architectural Technology
            Computer Graphics Option ........................................... 51
            Core Option ................................................................ 52
            Residential Design Option ............................................ 53
            Art (see Computer Graphics-Animation; Computer Graphics-Multimedia; Fine Art Foundation; Graphic Design; Illustration)
            Course Descriptions ................................................... 173–174
            Foundation (see Fine Art Foundation) .............................. 173
            History ....................................................................... 36–42
            Seminars and Workshops .............................................. 174
            Assaults .................................................................. 174
            Assembly .................................................................. 174
            Associate Degree
            Additional, Regulation for Granting .................................. 24
            Applied Arts ................................................................ 22
            Applied Science ............................................................. 22
            Arts .......................................................................... 22
            Business .................................................................... 22
            Definition of .................................................................. 21
            General .................................................................... 47
            List of ........................................................................ 47
            How to Apply for ............................................................ 24
            Institutional Requirements ............................................ 21–22
            Science .................................................................... 22, 43–45
            When Student Has Earned a Bachelor's Degree ............... 24
            Assurance of Quality ...................................................... 24
            Astronomy, Course Descriptions ..................................... 175
            Attendance .................................................................. 25
            Audio/Technology (see Media Technology) ...................... 16
            Auditing Classes .............................................................. 16
            Auto Body
            Refinishing (see Auto Body Repair) ................................. 59
            Repair ....................................................................... 59
            Automated Office Specialist .......................................... 140
            Automobile Repair (see Automotive Technology) ............ 175
            Automotive
            Course Descriptions .................................................. 175–176
            Technology ................................................................ 176
            Aviation ..................................................................... 61–84
            Airframe Maintenance, Course Descriptions ................. 176–177
            Continuing Education, Course Descriptions ................. 177
            Electronic (see Avionics) ............................................... 177
            Flight Technology .......................................................... 82
            Flight Training, Course Descriptions .............................. 178
            General Maintenance, Course Descriptions .................... 178
            Instrument Repair, Course Descriptions ......................... 178
            Ground School, Course Descriptions .............................. 178–179
            Maintenance (see Airframe Maintenance Technology; Avionics; Powerplant Maintenance Technology) .................. 179
            Powerplant Maintenance, Course Descriptions ............... 179
            Business .................................................................... 179
            Instrument Repair, Course Descriptions ......................... 179
            Avionics
            Course Descriptions .................................................. 63, 177–178
            B
            Ballet (see Dance Transfer and Dance Career) .................. 65
            Banking (see Credit Union Management) ......................... 65
            Banking Management, AIB Diploma Program .................. 65
            Basic Office Skills Training (see Office Skills Training) ... 65
            Basic Skills, Assessment and Advising .......................... 65
            Basic Emergency Medical Services ................................. 88
            Biology, Course Descriptions ......................................... 99
            Biomedical
            Electronics (see Electronics Technology, Biomedical Option)
            Instruments (see Electronics Technology, Biomedical Option) 88
            Board of Trustees .............................................................. 2
            Bookkeeper (see Accounting) ........................................ 2
            Bookkeeping (see Accounting) ........................................ 2
            Broadcasting (see Media Technology) ............................. 2
            Budgeting (see Managerial Accounting) .......................... 2

278
Building (see also Residential Building) .................................................. 181
Related, Course Descriptions ................................................................. 181
Maintenance ......................................................................................... 66
Trades, Course Descriptions ................................................................. 181
Business (see International Business Management; Managerial Accounting; Management, Advanced) Administration .................................................... 67
Course Descriptions ........................................................................... 182
Development Seminars, Course Descriptions ........................................ 150
Transfer (see Pre-Business)
C
CABS (see Computer Applications Using Business Software) .................. 
CAD/CAM Engineering Technician (see also Computer-Aided Drafting and Design) ................................................................. 84
Canceled Classes .................................................................................. 18
Career and Employment Development Services ................................... 32
Certificate of Achievement Certificates and Applied Degrees, List of ................................................................. 47
Definition of ......................................................................................... 17
How to Apply for .................................................................................. 24
Institutional Requirements .................................................................. 21
Cheating ................................................................................................. 25
Chemical Technology .......................................................................... 155
Chemistry ............................................................................................. 42-45
Course Descriptions ........................................................................... 188-189, 268
Child Care/Day Care (see Child Development) ....................................... 112-113
Child Development ............................................................................. 187-188
Chinese, Course Descriptions ............................................................. 189
DISB (see Computer Information Systems for Business) ...................... 
Civil Technology .................................................................................. 69
Civil Engineering, Course Descriptions ................................................ 189
CLEP (College Level Examination Program) ........................................ 21
Clinical (see Office Skills Training)
College Responsibilities ...................................................................... 32
Collision Repair (see Auto Body Repair)
Combative/Weight Training, Course Descriptions .............................. 242-243
Commercial Art (see Graphic Design)
Illustration (see Illustration)
Commercial Performance (see Music Commercial Performance)
Commercial Pilot (see Aviation Flight Technology)
Communication (see Speech Communication, Writing)
Communications (see Electronic Technology, Communications Options; Communication Systems, Sign Language Interpreter; Speech Communication)
Communications Service Technician (see Electronic Technology)
Community Health Services, Course Descriptions ............................. 189-190
Complaints, Student ........................................................................... 28
Composition (see Writing)
Computer-Aided Drafting and Design (see CAD/CAM)
Computer Applications Using Business Software, Course Descriptions ................................................................. 182-164
Computer Auditing (see Computer Security and Controls)
Computer Engineering (see Computer Science)
Computer Graphics (see also Architectural Technology, Residential Design Option) Animation ................................................................. 52
Audio/Video ......................................................................................... 53
Computer Information Systems for Business, Course Descriptions .... 190-193
Computer Networking and Communications
Computer Numerical Control (CNC) (see Industrial Technology)
Computer Office Applications, Course Descriptions ........................... 116
Computer Programmer (see Programmer/Analyst) ................................. 116
Repair Technician ................................................................................ 72
Sales Specialist .................................................................................... 133
Security and Controls ......................................................................... 71
Service Technician (see Electronics Technology, Computer Technician)
Support Specialist (see Microcomputer Support Specialist)
Computer Science ............................................................................. 43-45
Course Descriptions ........................................................................... 196

Computer Numerical Control Programmer
(see also Industrial Technology) ............................................................. 118
Computers (see Advanced Microcomputer Application Specialist; Architectural Technology, Graphics Option; Automated Office Specialist; CAD/CAM Engineering Technician; Computer Graphics/Animation; Computer Graphics/Multimedia; Computer Networking and Communications; Computer Repair Technician; Computer Sales Specialist; Computer Science; Computer Security and Controls; Computerized Numerical Control Programmer; Drafting and Design; Electronics Technology, Computer Technician; Geographic Resource and Environmental Technology, Graphic Design; Information/Word Processing; Microcomputer Support; Microcomputer Systems; Microcomputer User Support Specialist; Photographic Imaging; Programmer/Analyst; Records Management, Specialist; System Support Specialist; for the AS/400; Windows Programming Specialist)
Conduct, Student Rights, Responsibilities, and
Conference Reporting (see Court and Conference Reporting)
Construction (see Electrical Technology; Construction; Residential Building) Design (see Architectural Technology, Core Option; Architectural Technology, Residential Design Option)
Continuing Health Careers, Course Descriptions ............................... 184-187
Cooperative Education, Course Descriptions ..................................... 155, 266
Core Requirements ............................................................................. 22
Corrections (see Criminal Justice, Corrections)
Counseling and Academic Advising Services ..................................... 32
Credits ................................................................................................. 16-187
Departments ......................................................................................... 165-246
How to Read ......................................................................................... 156
Course, Definition of ........................................................................... 17
Repeat .................................................................................................. 16
Special ................................................................................................ 265-267
Tuition/Fees ......................................................................................... 14
Variable Date ....................................................................................... 15
Core Requirements (see General Education Core Requirements)
Court and Conference Reporting ......................................................... 75
Course Descriptions ........................................................................... 184
Court Reporter (see Court and Conference Reporting)
C.P.A. (see Accounting, C.P.A. Exam Preparation)
Credit Hour
Cost of ................................................................................................. 15
Credit/No-Credit Grading ................................................................. 18
Definition of ......................................................................................... 17
Credit Union Management ................................................................ 50
Course Descriptions ........................................................................... 186
Criminal and Civil Actions ................................................................. 27
Criminal Justice (see also Security and Controls; Police Academy) 36-42, 37
Corrections ......................................................................................... 31
Course Descriptions ........................................................................... 193-195
Law Enforcement .............................................................................. 82
Curriculum, Definition of .................................................................. 17
D
Dance
Course Descriptions ........................................................................... 197-198
Transfer and Dance Career ................................................................. 146
Physical Fitness, Course Descriptions ............................................... 247-248
DANTES (see Defense Activity for Non-Traditional Educational Support)
Day Care (see Child Development)
Defense Activity for Non-Traditional Educational Support (see DANTES) .................................................. 21
Degree and Certificate Programs ....................................................... 46-162
Dental Assistant ................................................................................. 95
Course Descriptions ........................................................................... 196
Dental Assisting, Course Descriptions ............................................... 198-100
Dental Hygiene, Course Descriptions ................................................. 199-200
Dental Hygienist ................................................................................ 96
Course Descriptions ........................................................................... 199-200
Desktop Publishing (see Graphic Design)
Diagnostic Medical Sonography ....................................................... 37
Course Descriptions ........................................................................... 217-218
Die Maker (see Tool and Die Maker)
Digital Electronics (see Electronics Technology, Communications Option; Electronics Technology, Digital Option)
<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Directory of Departments</td>
<td>6</td>
</tr>
<tr>
<td>Disabilities, Information for People with</td>
<td>33</td>
</tr>
<tr>
<td>Discrimination</td>
<td>29-30</td>
</tr>
<tr>
<td>Definition of</td>
<td>29</td>
</tr>
<tr>
<td>Drafting (see Architectural Tech, Graphics Option; Architectural Technology, Core Option; Architectural Technology, Residential Design Option)</td>
<td>85</td>
</tr>
<tr>
<td>Design and</td>
<td>209-210</td>
</tr>
<tr>
<td>Drama (see Theater Acting Transfer)</td>
<td>25</td>
</tr>
<tr>
<td>Dress</td>
<td>25</td>
</tr>
<tr>
<td>Drops and Adds (see Schedule Changes)</td>
<td></td>
</tr>
<tr>
<td>Drug</td>
<td></td>
</tr>
<tr>
<td>Abuse (see Substance Abuse)</td>
<td></td>
</tr>
<tr>
<td>Regulations</td>
<td></td>
</tr>
<tr>
<td>Dual Enrollment</td>
<td></td>
</tr>
<tr>
<td>Due Process</td>
<td></td>
</tr>
<tr>
<td>Judicial Board</td>
<td>27-28</td>
</tr>
<tr>
<td>Student Appeals</td>
<td></td>
</tr>
<tr>
<td>of Academic Disciplinary Action</td>
<td>28</td>
</tr>
<tr>
<td>of Academic Records</td>
<td>28</td>
</tr>
<tr>
<td>of Administrative Withdrawal</td>
<td>28</td>
</tr>
<tr>
<td>of Disciplinary Action</td>
<td>27-28</td>
</tr>
<tr>
<td>of Educational Records</td>
<td>28</td>
</tr>
<tr>
<td>of Violation of Academic Rules and Regulations</td>
<td>27-28</td>
</tr>
<tr>
<td>Student Complaints</td>
<td>28</td>
</tr>
<tr>
<td>Student Grade Appeals</td>
<td>28</td>
</tr>
<tr>
<td>Date</td>
<td></td>
</tr>
</tbody>
</table>

**Economics**

Course Descriptions: 201

**Education**

Course Descriptions (see Pre-Economics): 201

**Electrical Technology**

Course Descriptions: 201

Secondary: 36-42, 38

Secondary: 36-42, 41

**Electrical Trades (see Electrical Technology)**

**Electronics (see Avionics; Computer Repair Technician; Electronics Technology, Biomedical Option; Electronics Technology, Communications Option)**

**Electronics Technology**

Biomedical Option: 86

Communications Option: 89

Computer Technician: 72

Course Descriptions: 201-203

Digital Option: 90

**Elementary Education (see Education)**

**Emergency Medical Services (see also Basic Emergency Medical Services, Paramedic)**

Course Descriptions: 203-204

Seminar: 204

Emergency Medical Technology: 201-205

**Employment**

Placement (see Career and Employment Development Services): 11

Student: 11

**Engineering (see Computer Science)**

English: 205-206

English as a Second Language: 206

Course Descriptions: 206

Technical Course Descriptions: 207

Enrollment: Course Descriptions: 206

Environmental Resource Management Technology: 91

Environmental Science: 43-45, 44

Course Descriptions: 206

Evaluation of Instructional Quality: 27

Examinations: 26

**AFIT:** 21

**CLEP:** 21

**DANTES:** 21

**Earning Credit by Examination:** 21

**Executive Secretary:** 139

**Explosives:** 26

**Extension and Community Education:** 32

**F**

Faculty and Staff Directory: 269-275

Field Sales and Marketing: 134

Field Trips: 26

Fighting: 26

**Financial Aid**

Advance Check: 12

Appeals: 12

Budgeting Financial Aid Package: 12

Credit Hour Load: 12

Expected Family Contribution: 12

Falsification of Information: 12

How and When to Apply: 11

Need and Financial Assistance Package: 12

Renewal of: 14

Repayment of Grants: 13

Rights and Responsibilities of Students Receiving: 12

Rights to Information: 13

Satisfactory Academic Progress Requirements: 14

Selection Criteria: 12

Short Course Eligibility: 12

Sources of Financial Assistance: 10-11

Student Financial Services Committee: 14

Tuition Refunds: 12

Work Study: 12

**Veterans Information:** 14

**Financial Assistance, Sources of Employment:** 11

Grants: 11

Loans: 11

Scholarships: 10

Special Situation Funds: 11

Financial Responsibility: 26

Fine Art Foundation: 56

Fire Arts: 36-42, 38

Fire Department Operations (see Fire Science Academy; Fire Science Technology): 93

Fire Science Academy: 93

Course Descriptions: 237-238, 265

Technology: 94

Fire Suppression (see Fire Science Academy; Fire Science Technology): 243-244

Firefighter (see Fire Science Technology): 243-244

Fitsset: Course Descriptions: 243-244

Floral Science (see Horticulture): 243-244

Food Science (see Hotel/Motel and Food Service Operations): 243-244

Foreign Languages (see also Chinese, French, German, Japanese, Spanish): 38-42, 38

French: Course Descriptions: 208

**G**

Games and Recreational Activities: 26

General Education

Associate in Arts Degree: 36

Associate in Science Degree: 43

Core Requirements: 22

How to Satisfy: 22-24

**General Information:** 4-33

Maintenance (see Building Maintenance): 144

Office Skills Training: 190

Technology: Course Descriptions: 259

Geographic Information Systems (see Geographic Resource and Environmental Technology): 259
<table>
<thead>
<tr>
<th>Course Descriptions</th>
<th>210-211</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geography</td>
<td>35-42, 58</td>
</tr>
<tr>
<td>Geology Course Descriptions</td>
<td>208</td>
</tr>
<tr>
<td>Geosciences</td>
<td>43-45, 45</td>
</tr>
<tr>
<td>German, Course Descriptions</td>
<td>211</td>
</tr>
<tr>
<td>General</td>
<td>114</td>
</tr>
<tr>
<td>Course Descriptions</td>
<td>209-210</td>
</tr>
<tr>
<td>Global Perspectives on Diversity, Core Requirements</td>
<td>22</td>
</tr>
<tr>
<td>Grade</td>
<td>28</td>
</tr>
<tr>
<td>AIDS</td>
<td>18</td>
</tr>
<tr>
<td>Point Average, Computing</td>
<td>18</td>
</tr>
<tr>
<td>Reports</td>
<td>18</td>
</tr>
<tr>
<td>Grading, Credit-No Credit</td>
<td>16</td>
</tr>
<tr>
<td>Grading System</td>
<td>16</td>
</tr>
<tr>
<td>Audits</td>
<td>18</td>
</tr>
<tr>
<td>Incompletes</td>
<td>17</td>
</tr>
<tr>
<td>Withdrawals</td>
<td>18</td>
</tr>
<tr>
<td>Graduation Requirements, Certificates and Degrees</td>
<td>21-25</td>
</tr>
<tr>
<td>Associate Degree</td>
<td>22</td>
</tr>
<tr>
<td>Applied Arts, Criteria for</td>
<td>22</td>
</tr>
<tr>
<td>Applied Science, Criteria for</td>
<td>22</td>
</tr>
<tr>
<td>Arts, Criteria for</td>
<td>22</td>
</tr>
<tr>
<td>Science, Criteria for</td>
<td>22</td>
</tr>
<tr>
<td>Business, Criteria for</td>
<td>22</td>
</tr>
<tr>
<td>General, Criteria for</td>
<td>22</td>
</tr>
<tr>
<td>How to apply for</td>
<td>24</td>
</tr>
<tr>
<td>Institutional Requirements</td>
<td>21</td>
</tr>
<tr>
<td>Assurance of Quality</td>
<td>24</td>
</tr>
<tr>
<td>Certificates of Achievement</td>
<td>24</td>
</tr>
<tr>
<td>How to apply for</td>
<td>24</td>
</tr>
<tr>
<td>Institutional Requirements</td>
<td>21</td>
</tr>
<tr>
<td>List of</td>
<td>127</td>
</tr>
<tr>
<td>Granting Additional Associate Degree, Regulation for</td>
<td>24</td>
</tr>
<tr>
<td>Granting Associate Degree When Student Has Bachelor's Degree, Regulation for</td>
<td>24</td>
</tr>
<tr>
<td>Semester Transition Program, Completion Information</td>
<td>24</td>
</tr>
<tr>
<td>Transfer Information</td>
<td>24</td>
</tr>
<tr>
<td>Grants, Student</td>
<td>13</td>
</tr>
<tr>
<td>Graphic Design</td>
<td>27</td>
</tr>
<tr>
<td>Guest</td>
<td>10</td>
</tr>
<tr>
<td>Applicants</td>
<td>10</td>
</tr>
<tr>
<td>Speakers</td>
<td>26</td>
</tr>
<tr>
<td>Health</td>
<td>24</td>
</tr>
<tr>
<td>HealthCare, Course Descriptions</td>
<td>24</td>
</tr>
<tr>
<td>Cardiac</td>
<td>244</td>
</tr>
<tr>
<td>Wellness</td>
<td>244-245</td>
</tr>
<tr>
<td>Health/Surgical Skills (see Surgical Technology)</td>
<td>25</td>
</tr>
<tr>
<td>Heating (see Heating and Air Conditioning; Heating, Air Conditioning; and Refrigeration)</td>
<td>24</td>
</tr>
<tr>
<td>Heating and Air Conditioning</td>
<td>110</td>
</tr>
<tr>
<td>Heating, Air Conditioning, and Refrigeration</td>
<td>110</td>
</tr>
<tr>
<td>Heating, Ventilating, and Air Conditioning, Course Descriptions</td>
<td>216-17</td>
</tr>
<tr>
<td>History</td>
<td>36-42, 39</td>
</tr>
<tr>
<td>Course Descriptions</td>
<td>211-212</td>
</tr>
<tr>
<td>Honors, Course Descriptions</td>
<td>214</td>
</tr>
<tr>
<td>Horticulture</td>
<td>285</td>
</tr>
<tr>
<td>Course Descriptions</td>
<td>214-215</td>
</tr>
<tr>
<td>Horticulture/Fruitculture (see Horticulture)</td>
<td>25</td>
</tr>
<tr>
<td>Hospitality Careers (see Hotel-Motel/Food Management Specialist; Tourism; Aviation and Travel Agency Operations)</td>
<td>26</td>
</tr>
<tr>
<td>Hotel/Motel and Food Service Operations, Course Descriptions</td>
<td>212-214, 265</td>
</tr>
<tr>
<td>Hotel-Motel/Food Management Specialist</td>
<td>111</td>
</tr>
</tbody>
</table>

| Housing          | 10 |
| Human Resource Management | 139 |
| Human Services   | 199 |
| Aging (see Gerontology) | 215-216 |
| General          | 116 |
| Substance Abuse (see Substance Abuse) | 36-42, 39 |
| Group             | 216 |
| Industrial Automation | 220 |
| Technology (see also General Technology) | 9 |
| Information and Records Management (see Records Management) | 9 |
| Information System Auditing (see Computer Security and Controls) | 9 |
| Information/Word Processing | 139, 140 |
| Insurance, Course Descriptions | 32 |
| Interior Design (see Interior Design Assistant, Pre-Professional) | 36-42, 39 |
| Interior Design Assistant, Pre-Professional | 124 |
| International Applicants | 220-221 |
| Business          | 9 |
| Programs           | 68 |
| Student            | 32 |
| Internetworld Wide Web (see Computer Networking and Communications) | 36-42, 39 |
| Interpreter (see Sign Language Interpreter) | 36 |
| Japanese          | 223-224 |
| Journalism, Course Descriptions | 224 |
| Labor Relations   | 130 |
| Course Descriptions | 224 |
| Landscape, Course Descriptions | 224-226 |
| Landscape Architecture | 125 |
| Landscape Careers (see Geographic Resource and Environmental Tech; Horticulture/Landscape Architecture) | 32 |
| Lansing Community College Foundation | 32 |
| Law (see Legal Assistant, Legal Assistant, Post-Baccalaureate) | 32 |
| Law Enforcement (see Criminal Justice; Criminal Justice, Law Enforcement; Mid-Michigan Police Academy) | 32 |
| Law Enforcement   | 32 |
| Legal Assistant    | 127 |
| Course Descriptions | 226-227 |
| Post-Baccalaureate | 128 |
| Legal Secretary    | 141 |
| Liberal Arts       | 36-42, 39 |
| Library Information Services | 32 |
| Limited English Proficiency Program | 32 |
| Linguistics, Course Descriptions | 227-228 |
| Literature         | 36-42, 39 |
| Literature Table (see Student Literature Table, Regulations for Use) | 11 |
| Language          | 11 |
| Machine Control (see Electrical Technology, Control and Maintenance) | 120 |
| Maintenance (see also Electrical Technology, Control and Maintenance) | 120 |
| Repair (see also Machine Maintenance, Millwright) | 120 |
| Machine Tool Technology, Course Descriptions | 228 |
| Machining (see Machinist, Toolmaker, Tool and Die Maker) | 251 |
Nursing
Course Descriptions .................................. 239–240
LPN Option ........................................ 102
RN Option ......................................... 103
O
Obstructing and Jogging ................................... 26
Oceanology, Course Descriptions ...................... 241
Office Support
Administration, Course Descriptions ................ 246–241
Assistant (see Office Support) ......................... 144
Careers (see Administrative Assistant, Automation Support; Executive Secretary, Information/Words Processing; Legal Secretary; Medical Administrative Assistant; Medical Transcriptionist; Office Skills Training; Office Support; Records Management) ............ 241–242
Skills Training (see Office Skills Training) ........... 144
Support .............................................. 144
Older Adults (see Gerontology) ....................... 29
Oncology (see Radiation Therapy) ..................... 26
Organizations ....................................... 247
Outdoor Activities, Course Descriptions .......... 247
P
Paralegal (see Legal Assistant; Legal Assistant, Post-Baccalaureate) ............................ 103
Paramedic (see Emergency Medical Services) ..... 104
Patient Care Technician (see Multi-Skilled Patient Care Technician) ......................... 104
Photography
Moving Image (see Photographic Imaging) ......... 247
Still Image (see Photographic Imaging) .............. 247
Physical Fitness, Course Descriptions ............... 247
Aquatics ........................................... 248
Combative/Weight Training .......................... 242–243
Dance Courses .................................... 243
Fitness Courses .................................. 243–244
Health/Fitness Centers ................................ 245
Health/Fitness Exercise ................................ 245
Individual Sport/Interest............................. 245–247
Outdoor Activity .................................. 247
Professional Courses ................................ 247
Team Sport ........................................ 247–248
Physics
Course Descriptions ................................ 248–249
Pre-Engineering ................................... 43–45, 45
Physiology, Course Descriptions .................. 248
Plagiarism ...................................... 248
Police Academy (see Criminal Justice, Law Enforcement; Mid-Michigan Police Academy) ...... 248
Policies, Procedures, and Regulations ................ 33
Political Science, Course Descriptions ............. 248, 267
Post-Regulations .................................. 30
PowerPlant Maintenance Technology ................ 36–42, 37
Pre-Accounting .................................... 36–42, 37
Pre-Business ....................................... 36–42, 37
Pre-Economics ..................................... 36–42, 37
Prescriptions, Definition of .......................... 17
Preschool Education (see Child Development) .... 3
Probation and Parole (see Criminal Justice, Corrections) .................. 3
Professional Courses, Physical Fitness, Course Descriptions ..................... 247
Professional Pilot (see Aviation Flight Technology) .......................... 247
Network (see Computer Networking and Communications)
Numerical Control (see Computerized Numerical Control) .......................... 282
<table>
<thead>
<tr>
<th>V</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Vandalism</td>
<td>27</td>
</tr>
<tr>
<td>Variable Data Courses</td>
<td>15</td>
</tr>
<tr>
<td>Financial Assistance</td>
<td>12</td>
</tr>
<tr>
<td>Veteran's Information</td>
<td>14</td>
</tr>
<tr>
<td>Certification Policy for VA Educational Benefits</td>
<td>14</td>
</tr>
<tr>
<td>Satisfactory Progress for Veteran's Benefits Eligibility</td>
<td>13</td>
</tr>
<tr>
<td>Veterinary Medicine (see Veterinary Technology)</td>
<td>157</td>
</tr>
<tr>
<td>Veterinary Technology</td>
<td>157</td>
</tr>
<tr>
<td>Video Cassettes</td>
<td>27</td>
</tr>
<tr>
<td>Video Production (see Media Technology)</td>
<td></td>
</tr>
<tr>
<td>Visual Arts (see Fine Art Foundation)</td>
<td></td>
</tr>
<tr>
<td>Vocabulary Improvement, Course Descriptions</td>
<td>262</td>
</tr>
<tr>
<td>Volunteer Services</td>
<td>31</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>W</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Weapons</td>
<td>27</td>
</tr>
<tr>
<td>Welding (see Welding Technology)</td>
<td></td>
</tr>
<tr>
<td>Welding Technician (see Welding Technology)</td>
<td></td>
</tr>
<tr>
<td>Welding Technology</td>
<td>123</td>
</tr>
<tr>
<td>Course Descriptions</td>
<td>262</td>
</tr>
<tr>
<td>Windows Programming Specialist</td>
<td>77</td>
</tr>
<tr>
<td>Writing (see Electrical Technology; Electrical Technology, Construction)</td>
<td></td>
</tr>
<tr>
<td>Withdrawal</td>
<td></td>
</tr>
<tr>
<td>Admin</td>
<td>16</td>
</tr>
<tr>
<td>Administrative</td>
<td>16</td>
</tr>
<tr>
<td>Procedure for Resolving Health-Related Issues</td>
<td>17</td>
</tr>
<tr>
<td>Student Initiated</td>
<td>16</td>
</tr>
<tr>
<td>Women's Resource Center</td>
<td>33</td>
</tr>
<tr>
<td>Word/Information Processing (see Information/Word Processing)</td>
<td></td>
</tr>
<tr>
<td>Word Processing (see Information/Word Processing)</td>
<td></td>
</tr>
<tr>
<td>Work Processing Specialist (see Automated Office Specialist)</td>
<td></td>
</tr>
<tr>
<td>Work Study (see also Employment, Student)</td>
<td>12</td>
</tr>
<tr>
<td>Writing</td>
<td></td>
</tr>
<tr>
<td>Assessment (see Basic Skills)</td>
<td></td>
</tr>
<tr>
<td>Core Requirements</td>
<td>22-23</td>
</tr>
<tr>
<td>Course Descriptions</td>
<td>262-264</td>
</tr>
<tr>
<td>Restricted Descriptions</td>
<td>264</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>T</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Table for Determining Academic Status</td>
<td>18-19</td>
</tr>
<tr>
<td>Team Sports, Course Descriptions</td>
<td>247-248</td>
</tr>
<tr>
<td>Technology, General (see General Technology)</td>
<td></td>
</tr>
<tr>
<td>Telecommunications (see Media Technology)</td>
<td></td>
</tr>
<tr>
<td>Telephone Directory</td>
<td>6</td>
</tr>
<tr>
<td>Theater</td>
<td></td>
</tr>
<tr>
<td>Acting Transfer</td>
<td>149</td>
</tr>
<tr>
<td>Course Descriptions</td>
<td>266-269</td>
</tr>
<tr>
<td>Theft</td>
<td>27</td>
</tr>
<tr>
<td>Tool and Die Maker (see also Machinist Toolmaker)</td>
<td>122</td>
</tr>
<tr>
<td>Tourism: Airlines and Travel Agency Operations</td>
<td>161</td>
</tr>
<tr>
<td>Course Descriptions</td>
<td>261-262</td>
</tr>
<tr>
<td>Transcription (see Court and Conference Reporting)</td>
<td></td>
</tr>
<tr>
<td>Transcriptionist (see Court and Conference Reporting)</td>
<td></td>
</tr>
<tr>
<td>Transcripts, Student</td>
<td>19</td>
</tr>
<tr>
<td>Transfer</td>
<td></td>
</tr>
<tr>
<td>Accredited and Non-Accredited Institutions</td>
<td>20</td>
</tr>
<tr>
<td>Credits from Other Institutions, Acceptance and Evaluation</td>
<td>20</td>
</tr>
<tr>
<td>Information</td>
<td>163-164</td>
</tr>
<tr>
<td>MACRAO Transfer Agreement</td>
<td>164</td>
</tr>
<tr>
<td>Non-Accredited Institutions</td>
<td>20</td>
</tr>
<tr>
<td>Transportation (see Aviation Flight Technology; Truck Driver Training)</td>
<td></td>
</tr>
<tr>
<td>Travel Agent (see Tourism: Airlines and Travel Agency Operations)</td>
<td></td>
</tr>
<tr>
<td>Truck Driver Training</td>
<td>122</td>
</tr>
<tr>
<td>Course Descriptions</td>
<td>259</td>
</tr>
<tr>
<td>Tuition and Fees</td>
<td></td>
</tr>
<tr>
<td>Payment of</td>
<td>15</td>
</tr>
<tr>
<td>Refund Policy</td>
<td>15</td>
</tr>
<tr>
<td>Residency</td>
<td>14</td>
</tr>
<tr>
<td>Tutorial Services</td>
<td>33</td>
</tr>
</tbody>
</table>
VISITORS TO LANSING COMMUNITY COLLEGE

The LCC Visitor Parking Area is located in the AutoCenter Courtyard in the 400 block of Grand Avenue.

ENTERING THE LOT

1. Traveling north on Grand Avenue, the AutoCenter Courtyard is located just past the intersection of Grand Avenue and Shiawassee Street.
2. Visitor parking is located along the south wall of the Courtyard (on your left as you drive in). All visitor spaces are posted with signs.
3. Attach your visitor parking permit (using the sticky tape) to the left rear window (not the side window) so the permit is visible from the rear of the car.
4. Throw away your visitor parking permit (after the expiration date) when use is completed.
CAMPUS MAP

BUILDING INFORMATION

1B. Office Unit B (OUU)
1C. Office Unit C (OUU)
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
6A. Rodger's-Carrier House
5C. LCD 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 (Quick Card 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 (Quick Card Only)
15. Continental Building (CB)
16. City Parking Ramp (Quick Card and Cash)
17. Academic Facility (Under construction; expected completion early 1999)

☆ Emergency Phone
★ Handicapper Entrances
★ Handicapper Entrances with Electronic Doors
(Push-button electronic door at 2nd floor entrance of GVT from Parking Ramp)
〇 Handicapper Parking (Parking on 2nd floor of Parking Ramp and other marked spaces)
LEARNING CENTER LOCATIONS
EXTENSION AND COMMUNITY EDUCATION

CHARLOTTE
Charlotte High School

DANVILLE
Dansville High School

DEWITT
Dewitt High School

EAST LANSING
Bailey Community Center
East Lansing High School

FOWLERVILLE
Fowlerville High School

GRAND LEDGE
Grand Ledge High School
Grand Ledge Sawdon

HASLETT
Haslett High School

HOLT
Holt Computer Center
Holt High School
Holt Junior High School

HOWELL
Howell Center
Howell High School

MASSON
Capital Area Career Center
Heartwood School
Mason High School

OKEMOS
Okemos Community
Education Center

S.I.T.E.S.
Byron High School
Corunna High School
Durand High School
Laingsburg High School
Morrice High School
Perry High School
Shiawassee RESD

ST. JOHNS
St. Johns High School

WAVERLY
Waverly High School
Waverly Middle School

WILLIAMSTON
Williamston Community Center
Williamston High School

For more information call the
Extension and Community Education Office
at (517) 483-1860

- LCC classes are held at local schools in partnership with Community Education Offices in these locations.