LCC: SUCCESS BEGINS HERE

Lansing Community College has been committed to the best in education for over forty years. As one of the largest, most comprehensive community colleges in the country, we are continuing that commitment into the new millennium. Year-round classes are offered on our 28-acre, capital city campus. There are more than 140 degree and certificate programs and over 2,500 classes. The first two years of a liberal arts education can be earned at LCC and transferred to a four-year college or university. We offer a comprehensive mix of education and training, and we provide state-of-the-art computer labs and classrooms as well as a continuously updated media services center and library within the Abel B. Sykes, Jr. Technology and Learning Center.

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

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

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

*Lansing Community College—Success Begins Here!*
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Please keep this catalog as a reference to the learning opportunities available at Lansing Community College. Education is a lifelong process, and LCC continues to be a resource for its students throughout the nation and the world. Futures not only begin at LCC, they are enriched, over and over, throughout a lifetime.
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.
The Board of Trustees abides by the Open Meetings Act which allows opportunities for student and/or public comment.
MESSAGE FROM THE PRESIDENT

Dear Student,

Welcome to Lansing Community College. I know your educational experiences here will be challenging, exciting, and fulfilling. You will be enriched by many new opportunities and experiences. Together, faculty, staff, administration, and students can accomplish much. We want your experiences here to improve the educational, social, and economic qualities of your life.

Whether you have come to Lansing Community College to start or to continue your college career, to learn new career skills, or to pursue a personal interest, we are confident we can help you achieve your goals. We offer many opportunities. Most important are our many outstanding programs and courses, each presented with state-of-the-art teaching and technology. We also offer a wide range of career exploration, international, and transfer programs to enrich your coursework.

LCC provides many diverse and interesting extracurricular activities. You might participate in programs offered by the Student Leadership Academy, Volunteer Services, The Lookout (LCC's student newspaper), performing arts, student clubs, our radio and television stations, and athletics or athletic events.

We value you and are working diligently to have your LCC experience exceed your expectations. Please help us do that by communicating suggestions and ideas for improving any area of this—YOUR college. You can do that by contacting faculty or staff members or by communicating with me personally.

I wish you all the best.

James F. Anderton, IV
President
Lansing Community College
General Information
## Directors of Departments

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### 2000-2001 Catalog Lansing Community College

**www.lcc.edu**
ACADEMIC CALENDAR

For an up-to-date academic calendar, including start and end dates for the 2000–2001 Fall Semester, Spring Semester, and Summer Session, point your Web Browser to:

www.lansing.cc.mi.us

or call our Information Center at:

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

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

Fall Semester 2000
Classes Begin .................................................. August 24
Labor Day ....................................................... September 4
Thanksgiving ................................................... November 23, 24
Classes End ..................................................... December 17

Spring Semester 2001
Classes Begin .................................................. January 13
Martin Luther King, Jr. Holiday .......................... January 17
Spring Break ................................................... March 5–11
Classes End ..................................................... May 11
Graduation ..................................................... May 12

Summer Session 2001
Classes Begin .................................................. June 6
Independence Day ............................................ July 4
Classes End ................................................... August 1
POLICIES, PROCEDURES, AND REGULATIONS

ADMISSIONS INFORMATION

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

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

GENERAL ADMISSION PROCEDURES

Procedures for Completing the Admissions Application
1. Complete all items requested on the application for admission.
2. 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.

APPLICANTS MAY MAIL, FAX (517) 483-9588, OR BRING APPLICATIONS TO THE ADMISSIONS OFFICE LOCATED IN THE GANNON VOCATIONAL-TECHNICAL CENTER, SUITE 2202, ITEMS SHOULD BE MAILED TO: 1111 ADMISSIONS OFFICE, LANSING COMMUNITY COLLEGE, PO BOX 40010, LANSING, MI 48901-7210. FOR ADDITIONAL INFORMATION CALL (517) 483-1000.

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

ACADEMIC ASSESSMENT AND PLACEMENT TESTING FOR STUDENT SUCCESS

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

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

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

What the Tests Are Like
Reading, writing, and some mathematics tests are administered on computers. The tests are adaptive, and each student's difficulty is based on the student's response to the preceding question. The tests are timed. The average amount of time spent on a test is about 30 minutes, so students should allow about two hours for all skill placement tests.

The results of the tests are available immediately.

Where Testing Centers Are Located
Drop-in placement testing is available on-campus in the Counseling Center in Room 2100 Gannon Vocational-Technical Building. For testing hours and information call (517) 483-9588. Placement tests are also available at the off-campus Learning Centers. Contact the off-campus Learning Centers or the LCC Extension and Community Education Office (517) 483-3360 for more information.

Other Options to Meet Skill Prerequisites
Students who have taken the SAT, the ACT, or Advanced Placement courses should have their scores sent to the LCC Admissions Office. The results may satisfy the reading and/or writing or the mathematics prerequisites. The Advanced Placement examination results may also result in the awarding of credit for a specific course. Students who have earned credits from an accredited college or university should have their official transcript sent to the LCC Admissions Office. An evaluation of transfer credits will determine if some of the courses meet skill prerequisites.

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

Academic Advising for Student Success
Faculty advisors and counselors are available to provide information on skill prerequisites, help students plan class schedules, discuss curriculum choices, and provide academic and personal support. Students are encouraged to meet with an advisor or counselor prior to their first semester and at least annually thereafter. As students progress in their program of study advisors or counselors can identify courses that remain to be completed. The Counseling Services Department has advisors and counselors in Room 2200 of the Gannon Vocational-Technical Center. (517) 483-1900.

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

Faculty advisors and counselors are also available during special advising times in the off-campus Learning Centers. Contact the Learning Center or the LCC Extension and Community Education Office, (517) 483-1900, for additional information.

SPECIAL PROGRAM/SPECIAL CIRCUMSTANCE ADMISSION

Selective Admission Programs
The programs listed in this section are selective admission programs. Admission to these programs is on a competitive basis, and these programs may 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 Reporting-Associate in Business
- Dental Assistant-Certificate of Achievement
- Dental Hygienist-Associate in Applied Science
- Diagnostic Medical Sonography-Associate in Applied Science
- Fire Academy-Certificate of Completion
- Histotechnology-Associate in Applied Science

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

Instrumental 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 classification of each international applicant determines the admission requirements and the attendance regulations apply 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 48010, LANSING, MI 48901-7210.

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

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

Admission to LCC as an international student will be considered after receipt of the application, $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 in 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:
• International Admissions Specialist (Chairperson)
• Director or Assistant Director of Entry Services
• Director of International Programs
• Bilingual Coordinator
• International Student Counselor
• A member of the teaching faculty

Dual Enrollment Program

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

Qualifications for the Dual Enrollment Program
Applicants must:
1. Be working toward high school graduation requirements;
2. Have attained junior or senior high school standing prior to applying for the program.

Application Procedures for the Dual Enrollment Program
Applicants must:
1. Complete a College application;
2. Submit written approval from their authorized high school official each semester of attendance;
3. Mail or bring the application, the nonrefundable $10 application fee, and letter of authorization to the LCC Admissions Office prior to enrolling in classes.
4. Comply with basic skills assessment and any additional approvals or prerequisites established by the department for the course(s) in which the student wishes to enroll.

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

Special Admission Program

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

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

Application Procedures for the Special Admission Program
Applicants must:
1. Complete a Special Admission Supplemental Application for each class in which the student intends to enroll;
2. Submit an official high school transcript each semester of attendance;
3. Obtain written consent from the student's parent/guardian and his/her authorized high school official each semester;
4. Mail or bring the Special Admission Supplemental Application(s), the nonrefundable $10 application fee, and transcript to the LCC Admissions Office prior to enrolling in classes.
5. Comply with basic skills assessment and any additional approvals or prerequisites established by the department for the course(s) in which the student wishes to enroll.

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

Nonpublic Home School Program

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

Qualifications for the Nonpublic Home School Program
Applicants must be at least 14 years of age prior to applying for the program.

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

Guest and international guest applicants must:
1. Obtain a guest application from the Registrar's Office of the student's primary college.
2. Submit a completed guest application form to LCC each semester they wish to continue in the guest admission category.
3. Mail or bring the guest application 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 decision to admit or deny admission will be based upon the individual merits of the appeal. Appeals submitted with insufficient time to complete the appeal process (eight working days) by the first day of class will be reviewed for the following semester. The appeal process shall consist of the following steps:

STEP 1: Admissions Counselor or Admissions Staff Member

If an Admissions Counselor or staff member denies admission to an applicant, 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 of Admissions within two working days of the denial.

STEP 2: Director of Admissions

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

STEP 3: The Board of Appeals

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

The appeals process for international students shall have the following modification in membership:
STEP 1: International Admissions Specialist or his or her designee
STEP 2: Director of Admissions
STEP 3: Board of Appeals

The International Student Board of Appeals shall consist of the following members:
A. The Dean of Student and Academic Support (Chairperson) or his or her designee
B. A member of the teaching faculty
C. International Services Director or his or her designee (as recorder and nonvoting member)

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

HOUSING

Lansing Community College maintains no housing units for students, nor does it enter into third-party contracts or supervise off-campus housing. However, the Student Life Office does offer a housing resource listing service. This service provides current available listings of Lansing area housing for sharing, sale, or lease. For more information, contact the Student Life Office at (517) 483-1285, or visit Room 2200F in the Gammon Vocational-Technical Center. There is no fee for this service.

FINANCIAL AID INFORMATION

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

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

SOURCES OF FINANCIAL ASSISTANCE

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

Scholarships and Awards

Resources that do not have to be paid back, usually awarded for academic achievement or talent that may or may not be based on need:
- Board of Trustees Awards are awarded to outstanding district high school graduates.
- Divisional Awards are awarded to outstanding students who are residents of the district and who apply directly to the College division or department in which the student wishes to study.
- Athletic Scholarships are awarded through the Athletic Department. Talented athletes should contact coaches in their respective sport areas.
- Michigan Competitive Scholarships are based upon a qualifying examination given during the junior and senior years in high school. Students may receive an "honorary" award based on need or a monetary award based upon need.
- Private Scholarships are available through the College or private organizations. Please consult the Office of Student Financial Aid/Veteran Services Department or Office of Admissions for information about private scholarship programs 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 and range from $400 to $3,360 (subject to change).
• Federal Supplemental Educational Opportunity Grants are awarded to high need students who receive Federal Pell Grants.
• Michigan Educational Opportunity Grants are awarded to needy students who have been Michigan residents for at least 12 consecutive months.
• Michigan Adult Part-Time Grants are awarded to self-supporting, part-time (3-11 credits), needy students who have been out of a high school program for at least two years and who have been Michigan residents for the past 12 months.
• Michigan Tuition Incentive Program (TIP) pays in-district community college tuition and fees for students from low-income families who meet the basic criteria and low-income financial guidelines. Eligible students must be United States Citizens and residents of Michigan according to institutional criteria, must be under 20 years of age, and must apply for certification to the State of Michigan prior to graduation from high school or completing the General Education Development (GED) Certificate.
• Lansing Community College grants are awarded to needy students who do not qualify for Federal Pell Grants on a funding available basis.
• Lansing Community College's Women's Resource Center Grants are available for tuition and child care for displaced homemakers and special populations. Students apply through the Women's Resource Center, Student Personnel Services Building, 2nd floor.
• Center for Aging Education Tuition Assistance is available to persons 69 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) 483-1195.

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 Department.
  1. Subsidized and Unsubsidized William D. Ford Direct Student Loans are available for students who meet eligibility requirements. Students apply by completing and submitting the 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. Applications for William D. Ford Direct PLUS loans are available in the Student Financial Aid/Veteran Services Department.
• ML-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 Department.

Student Employment

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

• Federal Work Study is awarded to needy students.
• Michigan Work Study is awarded to needy students who are Michigan residents.
• Career and Employment Services at LCC posts federal work study jobs, student employee jobs, and off-campus part- and full-time jobs. Students obtain information at the Career and Employment Services Office and must interview at the department’s employer's office.

Community Service Learning off-campus employment opportunities are available to students who are awarded Federal Work Study. Inquiries regarding these employment opportunities should be made to the Career and Employment Services Department.

Special Situation Funds

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

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

HOW AND WHEN TO APPLY

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

1. The completed FAFSA form may be submitted via the World Wide Web through the Financial Aid link located in the Student Personnel Services Building, Student Financial Aid/Veteran Services Department. Processing time is 14 to 21 working days after the student enters the application. Call (517) 483-1196 to schedule an appointment. Staff is available to assist students with filing 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.

3. The completed FAFSA form may be submitted via the Internet (FAFSA on the WEB). The URL is http://www.fafsa.ed.gov. All necessary instructions are provided. Please note all signature requirements.

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

To apply for financial assistance at the College, new students must also complete the LCC Application for Admission and return it to 11111 ADMISSIONS, LANSING COMMUNITY COLLEGE, PO BOX 40016, LANSING, MI 48901-7219. All students must complete the Free Application for Federal Student Aid (FAFSA) and submit the application to the federal processor prior to being awarded.

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

LCC Board of Trustees Scholarship forms are available through the financial aid office and the financial aid office is also available at the LCC Admissions Office and the Student Financial Aid/Veteran Services Department. Divisional Scholarships are available from the respective College division or department of the student’s major area of study.

The LCC Foundation has scholarships available throughout the year. Please consult the Student Financial Aid/Veteran Services Department or call the LCC Foundation Office at (517) 483-1195 for additional information.

Processing of the student’s application for financial assistance will be completed, and the student will be notified when the student has submitted the LCC Application for Admission to the Admissions Office and when the Student Financial Aid/Veteran Services Department receives the results of the federal application for student financial assistance. Students transferring from other colleges mid-year must submit a Financial Aid Transmittal from their previous colleges when they apply for financial assistance, along with any additional documents requested by the Student Financial Aid/Veteran Services Department.
The amount of the student's award will be based on a standardized cost of attending LCC, less the expected student and family's contribution. The College will attempt to meet a student's need based upon available funds. All financial assistance applications are confidential.

RIGHTS AND RESPONSIBILITIES OF STUDENTS RECEIVING FINANCIAL AID

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

NEED AND FINANCIAL AID PACKAGE

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

EXPECTED FAMILY CONTRIBUTION

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

If a student is a self-supporting or independent student (as determined by the FAFSA), the College assumes that since a student is the primary 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 standard method of determining student contribution. The student's expected contribution will come from personal earnings, spouse's earnings, if applicable, savings and assets which may include the use of student loan funding.

SELECTION CRITERIA

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

FALSIFICATION OF INFORMATION

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

The Student Financial Aid/Veterans Services Department 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. However, if a student enrolls for fewer than 12 credits, his or her award may be prorated to meet enrollment costs. For example, if a student enrolls for 9–11 credits, he or she would receive 75 percent of his or her award. If a student enrolls for 8 credits, he or she would receive 66 2/3 percent of his or her award. If a student enrolls for fewer than nine credits, he or she may be eligible for some federal programs. An independent student enrolled for 3–11 credits may be eligible for the Michigan Adult Part-time Grant.

Summer Session

Summer Session is shorter than Fall and Spring Semesters. Six credits is considered full-time for financial aid purposes, five credits is considered three-quarter time, and three credits is considered half-time. Enrollment for fewer than three credits will make a student ineligible for most financial aid. The length of the summer session also makes a difference in the calculation for the maximum financial aid allowable for that period. Generally, the amount of financial aid will be less for a student enrolled in the summer session compared to the regular full and spring semesters.

SHORT COURSE ELIGIBILITY

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

STUDENT BUDGETING OF THE FINANCIAL AID PACKAGE

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

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

2. The student will receive any remaining balance of grants, loans, or scholarships approximately 14 days after the first day of the semester.

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

FINANCIAL AID REFUNDS

Check Distribution

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

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

COLLEGE WORK STUDY/STUDENT EMPLOYMENT

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

FINANCIAL AID TUITION REFUNDS/WITHDRAWALS

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

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

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

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

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

REPAYMENT OF GRANTS

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

SATISFACTORY ACADEMIC PROGRESS POLICY FOR FINANCIAL AID ELIGIBILITY

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

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

Satisfactory Academic Progress for Federal or State Loan Programs

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

Financial Aid Academic Probation

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

Federal regulations state that an Academic Progress Policy must include a review of all periods of enrollment whether or not aid was received. Students who fail to maintain satisfactory academic progress in accordance with GPA or completion percent may be allowed to re-enroll on financial aid under a Success Contract (educational agreement). While on a Success Contract, a student will be considered to be making satisfactory academic progress for financial aid programs, excluding loans, as long as the student abides by the terms of the educational agreement or until the student has raised his or her cumulative grade point aver-

age to 2.0 or greater and has completed at least 70 percent of all credit hours attempted.

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

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

Appeal of Unsatisfactory Academic Progress

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

Reinstatement of Financial Aid Eligibility

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

Maximum Eligibility

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

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

Students requesting financial aid consideration for semester(s) beyond 150 percent of their program will be required to document in an academic completion plan (ACP), approved by a lead academic advisor, reasonably 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 decision 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 assistant is received. Excluding circumstances are those considered beyond the student’s control and must be documented. A financial assistance review committee will meet periodically to consider written appeals.
RIGHTS TO INFORMATION

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

RENEWAL OF FINANCIAL ASSISTANCE

Financial assistance is not automatically renewed. Awards are granted for one academic year only. A student must reapply for assistance for the following year by completing all required application forms by stated deadlines on the application. For renewal, a student must be enrolled in a certificate or degree program.

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

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

VETERANS INFORMATION

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

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

New student veterans and veterans wishing advance payment should apply at the Student Financial Aid/Veterans Services Department 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>
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</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 Student Financial Aid/Veterans Services Department 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 College Fund, Michigan National Guard CoOp, Air Force ROTC Program, Army ROTC Program, and USMC Open Admissions Program.

Satisfactory Progress for Veterans’ Benefits Eligibility

In compliance with Veteran Administration statutory requirements of subparagraph 5(a) section 1775 of chapter 36, Title 38 U.S. Code, Lansing Community College student veterans’ benefits recipients will not be certified as eligible for benefits when their academic progress (cumulative grade point average) places them in the academic warning range (probation) beyond two semesters of enrollment. Re-certification of eligibility for benefits will not be considered until after the semester in which the student regains academic good standing (Academic Standing Policy).

Certification Policy for Veterans Administration Educational Benefit Recipients

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

REGISTRATION INFORMATION

REGISTRATION PROCEDURES

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

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

VIRTUAL COLLEGE

Virtual College allows students to earn an associate degree utilizing the power and connectivity of the Internet. Independent, highly motivated learners, as well as those who face time and place constraints, will find the option especially attractive. Students enrolled in LCC’s Virtual College program will be guided by dedicated instructors whose courses have been specifically designed to deliver all the benefits of traditional learning but without the requirement to visit an LCC campus. The Internet component of these courses enables students to interact with each other and with the instructor. Though in most cases a textbook provides the content for these discussions, many courses have the lessons online as well. See the current Course Schedule or visit the Virtual College Web site at http://vcollege.lansing.cc.mi.us/ 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.

   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 for 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.


   e. The student is an employee of a business or industrial firm within the LCC district, and the employer agrees in writing to pay directly to the College all tuition and fees of the sponsored student for employer-approved classes.
2. The following applies to students 18 years of age or older:
   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 to pay directly to the College
      all tuition and fees of the sponsored student for employer-approved
      classes.
   c. The student is enrolled under the provisions of Act 245, Public Acts
      of 1935, as amended by Act 371, Public Acts of 1965 (students
      receiving benefits under the Michigan Veterans' Trust Fund).

II. Proof of Residency
   All students must provide proof of residency at the time of admission and
   registration (Michigan House Bill No. 4166, 1995). Lansing Community College
   reserves the right to make the final decision on residency eligibility. New students
   must verify residency at the time of admission. Current students whose mail is
   returned to the College are required to provide proof of residency in person prior
   to future enrollments. Residency is based on where a student has resided for the six months
   immediately prior to the first day of the semester of enrollment. Any one of the
   following documents is acceptable as proof of residency, providing that the six
   months prior to the first day of the semester for which residency is being sought
   is covered:
   A. Current Michigan driver's license or State identification card issued not less
      than six months prior to the first day of the semester in which residency is
      being sought
   B. Paid property tax receipts
   C. Rental or lease agreement
   D. Utility bills with the student's name and address for each of the six months
      prior to the first day of the semester

III. Residency Classification
   A. Resident Students — Students who provide proof of residency within the
      LCC district for the six months immediately prior to the first day of the
      semester of enrollment are charged resident tuition.
   B. Nonresident Students — Students who provide proof of residency within
      the State of Michigan, but outside the LCC district for the six months
      immediately prior to the first day of the semester of enrollment are charged
      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.
   E. Foreign nationals who are enrolling in Virtual College courses and reside
      outside the United States or are admitted to the United States in a tempo-
      rary, nonresident status will be charged international tuition. U.S. Nationals
      who are enrolling in Virtual College courses and are outside the United
      States will be charged domestic tuition.

IV. Residency Status for Military Personnel and Dependents
   Residency is based on the location of the present domicile of the applicant
   with the six-month requirement waived if the applicant can provide any of the
   documents listed below. This waiver is extended to the dependents (spouse and
   children) of the person named on the Department of Defense 214 or 899 who
   reside at the same address.
   A. Department of Defense 214, Separation from Active Duty Form, showing
      separation date within 120 days from the first day of the semester.
   B. Department of Defense 899, Change of Station Form, showing the
      Lansing area as the duty station.
   C. Department of Defense 899, Change of Station Form, showing a change of
      duty station for the head-of-household to an overseas destination or as
      the result of an emergency mobilization.

V. Petitioning for a Change in Residency Status
   Upon registering, a student shall be notified of his or her residency status.
   A. If the student feels that his or her residency status is not correct, the
      student may furnish the required proof of residency and the residency status
      will be corrected.
   B. After acceptance into the College as a nonresident or out-of-state resident,
      a student who has resided in the College district for six (6) months and
      furnishes the required proof of residency can have his or her residency status
      changed.
   C. If a change of residency status is approved by the published deadline date
      and the student is eligible for a refund, the difference between the previ-
      ous 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 ........................................... $ 49.00
   Nonresident Students ..................................... $ 78.00
   Out-of-State Students ..................................... $107.00
   International Students ................................... $127.00

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

   FEES FOR ALL STUDENTS*
   Application Fee (new students and
   guest students, not refundable) ......................... $10.00
   Registration Fee (all students,
   each semester, not refundable) ......................... $20.00
   Activities Fee (each semester)
       .01-8 credit hours ...................................... $ 1.50
       6.01-11 credit hours ................................... $ 4.50
       11.01 or more credit hours ............................. $ 7.50

   A fee will be charged for dishonored check or credit card transactions.
   Course fees vary and are published in the Course Schedule booklet each semester.
   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 re-
   funds should be addressed to the Cash Operation Office.

VARIABLE DATE COURSES
   It is the student's responsibility to process all courses by the established dead-
   line 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 ap-
   plication 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 12-WEEK COURSES
100% Refund* During the first week of the course
50% Refund (of tuition only) During the second week of the course
Drop with no course shown During the third week of the course
Change credit/audit status Prior to the end of the fourth week of the course

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

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

STUDENT CREDIT REQUIREMENTS
Student credit requirements are as follows:

FALL AND SPRING SEMESTERS
Full-time enrollment 12 credits
Three-quarters enrollment 9 credits
One-half enrollment 6 credits

SUMMER SESSION (8 WEEKS)
Full-time enrollment 6 credits
Three-quarters enrollment 5 credits
One-half enrollment 3 credits

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

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

Schedule changes involve the following procedures which must be completely carried out by the student so that the student's records in the Office of the Registrar may be accurately maintained:
1. Fill out a Drop-Add Form during the registration process or at the Office of the Registrar.

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

The College allows students to change from credit to audit or from audit to credit by the end of the sixth week for 16-week classes (and other equivalent dates as specified for variable length courses). Students electing to change from audit to credit are reasonable for having course work up to date at the time the change is made and must have instructor approval after the first week of the semester. Changes from credit to audit through the end of the sixth week for 16-week classes (and other equivalent dates as specified for variable length courses) do not require instructor approval. In addition, students should be aware that enrolling for an audit may have an impact on their financial assistance or on student employment at the College. Any student instance 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 (or other equivalent dates as specified for variable length courses), instructor approval is not needed, a final grade is not issued, and the withdrawn class is not recorded on the academic record. A copy of the student-initiated drop-add form is maintained in the Office of the Registrar.
D. A student may withdraw from a semester-length class after the end of the sixth week of the semester (or other equivalent dates as specified for variable length courses) only if he or she is completing course requirements at a passing level (1.0 or higher) at the time the W is requested. If the instructor finds that the student was not able to apply for the W in a timely fashion, the instructor may grant the student's request for a W if the student was passing the course on the date of the event that caused the application for withdrawal. A student may withdraw from a class up until the last week of the class unless a different date is specified in the course syllabus. The instructor's signature is required to withdraw, and the student will receive a grade of W.

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

An administrative withdrawal may be initiated by a classroom instructor in accordance with written procedures established by each department and with the co-recommendation of the respective departmental chairperson. An administrative withdrawal may be based on the following: (1) student nonattendance; (2) lack of prerequisites for a particular course; and/or (3) student behavior that interferes with the instructional process.
A. When a student fails to meet the attendance requirements of the class, the instructor may initiate an administrative withdrawal through the 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. The instructor has the right to 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 continuing 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 administrative withdrawal. The classroom instructor, with the recommendation of the appropriate departmental chairperson, may also recommend that a member of the counseling staff meet with the instructor and the student to review the circumstances of the student's behavior and to work out a possible alternative.

In all cases of administrative withdrawal, a student who is withdrawn from a semester-length class prior to the end of the sixth week of the semester (or other equivalent dates as specified for variable-length courses) will not receive a grade, and a record of attempting the class will not appear on the academic record. A copy of the administrative withdrawal form is maintained in the Office of the Registrar. After the sixth week of the semester (or equivalent date as specified for variable-length courses), the student will receive a W grade only if he or she was completing the course requirements at a passing level (1.0 or higher) up until the date of the event that caused the administrative withdrawal. If the student has not done passing work, he or she will receive a 0.0. Any student who is administratively withdrawn may appeal the withdrawal.

Lines of appeal for administrative withdrawal are presented in the catalog in the section entitled Due Process under the heading entitled Student Appeals.

III. Procedure for Resolving Health-Related Student Problems

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

A. Call the Department of Public Safety and the Office of the Dean of the Student and Academic Support Division if:
   1. Emergency health services are required or
   2. It appears that there has been or is likely to be a violation of the law.

B. Call only the Office of the Dean of Student and Academic Support if it appears that there has been a violation of a College regulation that is not also a violation of the law.

C. If there is no apparent violation of the law or College regulation and no emergency exists, the student should be encouraged to seek help from an appropriate health or counseling office or agency, on or off campus. Assistance from the Office of the Dean of Student and Academic Support and/or College counselors should be sought if needed.

D. If it appears to be a violation of the law or a College regulation, the Office of the Dean of Student and Academic Support (or designee) shall contact the counseling staff, and a member of the counseling staff will meet with the student and recommend:
   1. Continued counseling if the problem is within the ability of the Counseling Department to handle.
   2. Referral back to the Office of the Dean of Student and Academic Support when no health-related problem is evident or when it is determined that the Counseling Department can be of no further service.
   3. Referral to other appropriate professional assistance if the problem is beyond the ability of the Counseling Department to handle. If the problem significantly compromises the rights or safety of other persons at the College, or if a professional recommendation to withdraw the student is made, the Office of the Dean of Student and Academic Support may institute procedures for administrative withdrawal of the student from the College until he or she provides evidence from a licensed and appropriate health care professional stating that the student is able to function effectively with the stresses and demands of a College setting. The student may appeal the withdrawal decision to the Board of Appeals.
   4. Whenever possible, the counseling staff, working with the student's physician and/or relatives, shall make a recommendation to the student as to his or her future course of action.

ACADEMIC INFORMATION

ACADEMIC DEFINITIONS

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

Associate Degree: The associate degree consists of a minimum of 60 semester credits in designated courses. It is earned with a minimum of a 2.0 cumulative GPA, successful completion of the LCC General Education Core, and is recorded on the official academic record. At least 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 33 specifically designated semester credits in occupational areas. It is earned with a minimum of a 2.0 cumulative GPA and is recorded on the official academic record. At least one-third of the credits required for this certificate must be earned in attendance at Lansing Community College.

Credit Hour: A credit hour is an instructional unit carried out for the expressed purpose of achieving 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 90 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 credit hours in class or in laboratories. The student also earns an academic grade which evaluates the student's success in achieving the expected outcomes. A course routinely includes tests, quizzes, a final examination, and regular out-of-class assignments. At Lansing Community College, a standard college-wide course syllabus has been created for each course. A course is publicized in the College Catalog and the Course Schedule. A seminar, workshop, or fee-for-service learning/training unit is not a course.

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

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

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

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

GRADING SYSTEM

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

<table>
<thead>
<tr>
<th>STANDARD</th>
<th>NARRATIVE</th>
<th>GUIDELINE FOR PERFORMANCE</th>
<th>RECOMMENDED ACHIEVEMENT OF OBJECTIVES*</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.0</td>
<td>Excellent</td>
<td>91% to 100%</td>
<td></td>
</tr>
<tr>
<td>3.5</td>
<td>Good</td>
<td>85% to 90%</td>
<td></td>
</tr>
<tr>
<td>3.0</td>
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</tr>
<tr>
<td>1.5</td>
<td>Poor</td>
<td>68% to 70%</td>
<td></td>
</tr>
<tr>
<td>1.0</td>
<td>Poor</td>
<td>60% to 65%</td>
<td></td>
</tr>
<tr>
<td>0.0</td>
<td>Failure</td>
<td>0% to 59%</td>
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</tbody>
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* THIS GUIDELINE IS RECOMMENDED ONLY. STUDENTS SHOULD SEE THEIR INSTRUCTOR REGARDING THE GRADING SYSTEM USED FOR A SPECIFIC COURSE.

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

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

2. An "X" (audit) grade is given when a student chooses to audit a course. No credit is granted, but enrollment is reflected on the student's academic record.

3. A "W" (withdrawal) indicates a withdrawal from a course with achievement in the course above the failure level at the time of withdrawal. If a request for withdrawal from a semester-length class is received by the Office of the Registrar prior to the end of the sixth week of the semester (or other equivalent dates as specified for variable length courses), no grade will be recorded on the student's academic record. For withdrawals after the sixth week of the semester (or other equivalent dates as specified for variable length courses), a W is given only if the student has done passing work (1.0 or higher). If the student has not done passing work, he or she will receive a NC.

COMPUTING GRADE POINT AVERAGE

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

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

PASS/FAIL GRADING (P-Z)

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

1. Course prerequisites and other criteria for enrollment 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 12 percent of the total credits required for a degree or certificate may be acquired on the P-Z system.

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

1. Grades on the P-Z system are not included in computing the semester or cumulative grade average.

2. The grades granted on the P-Z system are determined with definition of "P" and "Z" as follows:

   a. P (pass) represents a level of performance equivalent to a regular number grade of 2.0 or above on a 4.0 system; credit is granted.

b. Z (fail) represents a level of performance less than a 2.0 on a 4.0 system; no credit is granted.

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

REPEATING A COURSE

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

GRADE REPORTS

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

GRADE CHANGES

Students may petition an instructor for a grade change of a final grade in a course. The line of formal appeal for grade change petitions can be found in the College's Due Process statement. A student's final grade in a course may be changed by the course instructor. Grade changes by instructors are initiated by submitting signed grade change forms to the departmental office for review and approval by the departmental chair or lead faculty member. The completed grade change form is then forwarded to the 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 POLICY

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

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

Summary of Academic Standing Policy

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

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

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

Lansing Community College recognizes that students are unsuccessful academically for a variety of reasons. Those students may return years later to find that their transferable GPA is in need of revision. The College has an Academic Amnesty Policy in order to allow such students a second chance. Qualified students may receive academic amnesty for a maximum of eighteen semester hours (or a quarter of at least 9.0) or the full quarter of at least 8.0. They will be no longer than the semester hour for which the grade has been established since the last grade for which amnesty, if granted, applies only to LCC courses—not to any courses at other institutions. Further, there is no guarantee, expressed or implied, that the student will be recognized by another college, university, or employer.

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 signature of the Registrar. The transcript includes courses waived, courses attempted and completed, courses and credits transferred, credits awarded for experiential learning credit hours, GPA points, Lansing Community College grade point average, current program and major, associate degree, certificates of achievement, and certificates of completion awarded at the College.

Students may request that a copy of their official transcript be given or mailed to any party by submitting a request in writing to the Office of the Registrar. The Office of the Registrar will process the request for the student’s official transcript within three business days. 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 parents of a student, if the student is a dependent, have the right to access, inspect, and review all educational records directly related to the student. Upon presentation of a signed written request and identification, access to the educational records of the student may be granted.

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 report 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 personal 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. The disclosure prevention form remains in effect until the student provides a written release to the Office of the Registrar. Directory information includes but is not limited to:
   a. Name of student
   b. Date of birth
   c. Dates of attendance
   d. Enrollment status
   e. Awards, degrees, or certificates received
   f. Participation in officially recognized activities
   g. Sport, weight, and height of members of athletic teams
   h. Previous educational agency or institution attended


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 or 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 College shall be notified of any such order or subpoena unless the subpoena or order prohibits notification by the College. The College shall comply with the subpoena ten (10) days after an attempt to notify the student of the request.
   g. Appropriate parties in an emergency if knowledge of the information is necessary to protect the health or safety of the student or other individuals.
   h. Parents who have established the student's status as a dependent according to Internal Revenue Code of 1954, Section 152.
   i. An alleged victim of any crime of violence of the results of any disciplinary proceeding conducted by the College against the alleged perpetrator of the crime.
   j. Military recruiters for the purpose of the Federal Military Recruiting Act as stated in Public Law 104-208, Section 509(2).

Lansing Community College will maintain a record of each disclosure of identifiable information from the external individual 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 educational 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 of educational records are stated in the College Catalog Under Student Appeals. Students who feel their rights under the Family Educational Rights and Privacy Act have been abridged may file complaints with the Family Policy and Regulations Office, U.S. Department of Education, Washington, D.C. 20202.
TRANSFER OF CREDITS

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

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

Only official transcripts will be evaluated for transfer credit. The credit value of each of the courses will be determined by Lansing Community College. The College will accept as official transcripts only incoming transcripts that have appropriate signatures and 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. More specific information about guidelines and procedures for accepting credits in transfer may be obtained from the Office of the Registrar.

Accredited and Non-Accredited Institutions

1. Freshmen and sophomore level courses are accepted in transfer. Higher level credits are accepted if they correspond to a specific course at Lansing Community College. In most cases, an accepted course will be considered an equivalent of a corresponding Lansing Community College course or an elective credit. In cases where Lansing Community College does not have a department or area similar to the courses on incoming transcripts, no credit will be given. Credits for courses graded Pass/Fail are not accepted in transfer.

2. Credits only, not grades, are transferred. When the overall grade point average of a transferring student is at or above a 2.0 on a 4.0 scale, the 1.0–1.5 or "D" grades will be accepted. Credits transferred in to specifically fulfill LCC General Education Core requirements and MACRAO requirements, however, must be graded 2.0 ("C") or higher. When the transferring overall grade point average is below 2.0 on a 4.0 scale, only courses graded 2.0 ("C") or higher will be accepted. With the exception of credits transferred in to fulfill LCC General Education Core requirements, the student may petition the departmental chairperson of his or her academic department to waive a grade or certificate course requirement(s) in which he or she has previously earned the 1.0–1.5 or "D". Waiver of a course requirement does not provide credit for a course. The departmental chairperson of the department concerned will notify the Office of the Registrar of waivers.

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 coursework.

4. A student may request a review of the evaluation if he or she feels that a course description differs from the way in which it was evaluated. A determination on the evaluation will be made by the departmental chairperson in conjunction with the Registrar. Verification of the change can be made through the 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 equivalence at Lansing Community College. The final transcript evaluation will have the signature of the appropriate divisional dean.

4. When two or more instructional departments are involved, the departmental chairperson of the department in which the student is enrolled will be responsible for consulting with the additional departmental chairpersons. When two or more departments are involved, the written reply to the Office of the Registrar will include the signatures of each 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.

CREDITS EARNED IN FOREIGN INSTITUTIONS

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

- Educational Credential Evaluators, Inc., P.O. Box 50970, Milwaukee, WI 53202-6970; e-mail eval@ece.org
- World Education Services, Inc., P.O. Box 745 Old Chelsea Station, New York, NY 10113-0745; e-mail info@wes.org
- International Education Research Foundation, Inc. (medical-related credentials), P.O. Box 66940, Los Angeles, CA 90066; e-mail: info@ierf.org

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

CREDIT FOR PREVIOUSLY ACQUIRED KNOWLEDGE AND LEARNING EXPERIENCE

Lansing Community College recognizes that learning outside of the classroom is valid. Therefore, the College assesses extra-institutional learning as part of its credentialing requirements. Any student who is currently enrolled at Lansing Community College may apply for experiential learning credit by obtaining an Experiential Learning Processing Form from the Office of the Registrar, Student and Academic Support Building, (517) 483-1266.

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

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

Application Procedures

Relevant aspects of personal and professional experience gained through actual job-related activities and special training experiences may be applied to an academic program at Lansing Community College. Learning experiences must directly relate to a specific course or courses required within a Lansing Community College program (curriculum) or the LCC General Associate Degree. These experiences must have been obtained from a nonacademic source or not
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) and the Advanced Placement Examination (AP). Students in need of information about these examinations should contact the Registrar's Office.

GRADUATION REQUIREMENTS, CERTIFICATES, AND DEGREES

INSTITUTIONAL REQUIREMENTS FOR CERTIFICATES OF ACHIEVEMENT AND CERTIFICATES OF COMPLETION

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

1. Complete a course of study approved by the College and consisting of a minimum of 30 semester credits for a certificate of achievement and 29 or fewer semester credits for a certificate of completion with no more than 10 percent of these credits acquired on the pass/fail (P-F) 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 one-third of the semester credits for the certificate 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.

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

INSTITUTIONAL REQUIREMENTS FOR ASSOCIATE DEGREES

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

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1. Complete a course of study approved by the College and consisting of a minimum of 69 semester credits with no more than 10 percent of these credits acquired on the pass/fail (P-F) 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.

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 predict their first semester of enrollment.

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

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

**Associate in Arts:** This is primarily a transfer degree. It is designed for students who intend to transfer to a four-year institution to pursue a baccalaureate degree in such fields as liberal arts, education, humanities, or the social sciences.

Requirements: 60-63 credits, including a minimum of 12 LCC General Education Core credits, demonstrated mathematics competency, additional general education requirements, subject matter concentrations (humanities, for example), and institutional associate degree requirements.

**Associate in Science:** This is primarily a transfer degree. It is designed for students who intend to transfer to a four-year institution to pursue a baccalaureate degree in such fields as mathematics, engineering, or the sciences.

Requirements: 60-63 credits, including a minimum of 12 LCC General Education Core credits, demonstrated mathematics competency, additional general education requirements, subject matter concentrations (humanities, for example), and institutional associate degree requirements.

**Associate in Applied Arts:** This degree is designed for students who seek education and the acquisition of skills needed to enter the job market or to advance in their current careers. This degree includes a concentration of courses in such fields as the visual arts or the performing arts.

Requirements: 60-72 credits, including a minimum of 12 LCC General Education Core credits, demonstrated mathematics competency, specific career program requirements, and institutional associate degree requirements.

**Associate in Applied Science:** This degree is designed for students who seek education and the acquisition of skills needed to enter the job market or to advance in their current careers. This degree includes a concentration of courses in fields such as health care, manufacturing, and construction.

Requirements: 60-72 credits, including a minimum of 12 LCC General Education Core credits, demonstrated mathematics competency, specific career program requirements, and institutional associate degree requirements.

**Associate in Business:** This degree is designed for students who seek business education and the acquisition of skills needed to enter the job market or to advance in their current careers. This degree includes a concentration of courses in areas such as marketing, management, and office administration.

Requirements: 60-72 credits, including a minimum of 12 LCC General Education Core credits, demonstrated mathematics competency, specific career program requirements in business-related areas (marketing, for example), and institutional associate degree requirements.

**General Associate Degree:** This degree is a customized program of study which should be approved by an advisor. It includes one or more areas of concentration of the student's own choosing.

Requirements: 60 credits, including a minimum of 12 LCC General Education Core credits, demonstrated mathematics competency, and institutional associate degree requirements.

**LCC General Education Requirements**

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

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

2. **Global Perspectives and Diversity**
   - Describe and analyze the ways in which different world societies/civilizations establish social, political, and economic order and the effect of these on individuals and societies/civilizations.
   - Describe and analyze the ways in which different world societies/civilizations have moderated conflict through art, architecture, and culture.
   - Describe and analyze how major ideas, cultural values, and institutions in world societies/civilizations have shaped cultures and the effect these have on individuals.
   - Describe and analyze how the United States includes and/or excludes diverse perspectives of different gender and ethnic groups.
   - Describe and analyze how the arts reflect the major social, political, and individual concerns of world societies/civilizations.

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

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

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

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HOW STUDENTS CAN SATISFY LCC GENERAL EDUCATION CORE REQUIREMENTS

All students must fulfill LCC General Education Core requirements in order to be awarded an associate degree. The ways in which students can satisfy these requirements are presented below. Because these may be revised each academic year, students should consult an academic advisor or the most recent edition of the College Catalog to stay informed of current options for satisfying Core requirements. Students also should be aware that not all courses 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 the ways listed below. Students should be aware that placement test scores, evidence of an earned associate degree, waiver of a specific Core course, and combinations and/or portions of courses do not satisfy or waive the LCC Core requirement for mathematics:

1. Passing the MATH 112 Proficiency Examination with the equivalent of a 2.0 grade or higher. (This exam is administered free of charge in the Learning Center, Room 309, Arts and Sciences Building. It may be taken up to twice for purposes of satisfying the Mathematics Core.)

2. Achieving a grade of 2.0 or better in one of the following approved Mathematics Core courses:
   - MATH 112 Intermediate Algebra (4)
   - MATH 115 Technical Math II (4)
   - MATH 117 Math for Business (4)
   (Students must meet prerequisites prior to enrolling in these courses. See the Course Descriptions section of this catalog.)

3. Achieving a grade of 2.0 or better in any of the following non-Core mathematics courses:
   - MATH 121 College Algebra I (4)
   - MATH 122 College Algebra II and Trigonometry (3)
   - MATH 126 College Algebra and Trigonometry (5)
   - MATH 130 Finite Mathematics (3)
   - MATH 141 Calculus with Applications (3)
   - MATH 151 Calculus I (4)
   - MATH 152 Calculus II (4)
   - MATH 201 Math for Liberal Arts I (3)
   - MATH 253 Calculus III (4)
   - MATH 260 Introduction to Differential Equations (3)
   - MATH 268 Linear Algebra (3)
   (NOTE: Achieving a grade of 2.0 or higher in one of these courses implicitly demonstrates competency. Descriptions of these courses can be found in the Course Descriptions section of this catalog.)

4. Establishing credit for an approved Mathematics Core course listed in #2 above or a non-Core mathematics course listed in #3 above through the Experiential Learning Process. (See section entitled Credit for Previously Acquired Knowledge and Learning Experience in this catalog.)

5. Transferring comparable course credit—general credit does not apply—for an approved Mathematics Core course listed in #2 above or a non-Core mathematics course listed in #3 above from an accredited institution. (See section entitled Acceptance and Evaluation of Transfer Credits from Other Institutions of Higher Education in this catalog.)

6. Establishing course credit for an approved Mathematics Core course listed in #2 above or a non-Core mathematics course listed in #3 above through the Advanced Placement Examination (AP), the College Level Examination Program (CLEP), or others as recognized by Lansing Community College.

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

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

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

1. Achieving a grade of 2.0 or higher in an approved Core course (credits in parenthesis):
   - a. Global Perspectives and Diversity
      - ENGL 211 World Literature I (4)
      - ENGL 212 World Literature II (4)
      - HUMS 211 History of Art I (4)
      - HUMS 212 History of Art II (4)
      - HUMS 213 World Civilizations I (4)
      - HUMS 214 World Civilizations II (4)
      - MGMT 201 Diversity in the Workplace (3)
      - OADM 275 Cultural Differences in Business (3)
      - PHIL 211 World Philosophies I (4)
      - PHIL 212 World Philosophies II (4)
      - POLS 250 Comparative Political Systems (3)
      - SOC 120 Introduction to Sociology (4)

   b. Science and Technology
      - ASTR 201 Introductory Astronomy (4)
      - BIOL 210 Natural Resource Conservation (4)
      - CHEM 101/102 General Chemistry Lecture I and Laboratory I (4)
      - CIS 200 Introduction to Information Systems Technology and Problem Solving (3)
      - ISCI 101 Integrated Science for Education I (4)
      - ISCI 102 Integrated Science—Physical (4)
      - METR 205 Introduction to Meteorology (4)
      - PHGY 201 Human Physiology (4)
      - PHYS 215/225 Physics I—Mechanics and Laboratory (5)

   c. Speech Communication
      - SPCH 110 Oral Communication in the Workplace (3)
      - SPCH 120 Dynamics of Communication (3)

   d. Writing
      - ENGL 112 Writing about Literature and Ideas (4)
      - ENGL 122 Honors Writing about Literature and Ideas (4)
      - WRIT 121 Composition I (4)
      - WRIT 122 Composition II (4)
      - WRIT 124 Technical Writing (3)
      - WRIT 127 Business Writing (3)
      - WRIT 131 Honors Composition I (4)
      - WRIT 132 Honors Composition II (4)

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

2. Passing a Comprehensive Examination for an approved Core area course listed in #1 above in cases where such exams are available. Upon successfully completing the exam, a student would receive LCC credit for the course. The student is also required to pay tuition for the course prior to taking the exam. (See the section entitled Credit by Examination in this catalog.)

3. Establishing credit for an approved Core course listed in #1 above through the Experiential Learning Process. (See section entitled Credit for Previously Acquired Knowledge and Learning Experience in this catalog.)

4. Transferring comparable course credit—general credit does not apply—for an approved Core course listed in #1 above from an accredited institution. (See section entitled Acceptance and Evaluation of Transfer Credits from Other Institutions of Higher Education in this catalog.)

5. Establishing Core course credit for courses listed in #1 above through the Advanced Placement Examination (AP), the College Level Examination Program (CLEP), or others as recognized by Lansing Community College.

6. For global perspectives and diversity, writing, and science and technology, presenting evidence of satisfying MACRAO requirements at an accredited college or university other than LCC, provided the student has earned a 2.0 or higher for each course. (NOTE: This does not satisfy the speech communication requirement.)

7. Presenting evidence of an earned baccalaureate degree from an accredited college or university. This would fulfill all General Education Core requirements.
REGULATION FOR THE GRANTING OF ADDITIONAL ASSOCIATE DEGREES

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

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

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

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

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

ASSURANCE OF QUALITY

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

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

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

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

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

STUDENT RIGHTS, RESPONSIBILITIES, AND CONDUCT

The College adheres to the principle that the campus climate provide for student maximum freedom and necessary order. In order to ensure this principle, the College has established procedures for the redress of grievances by the in-
individuals accused in such proceedings. In addition, general rules and regulations have been established by the College to ensure the protection of students 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 harm 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, malicious, 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.

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) use of, or assistance in the use of, any unauthorized aids to work; (3) the acquisition, without permission, of tests or other academic material belonging to a member of the College faculty or staff. Any interference between students in a testing situation may be interpreted as cheating. Academic honesty is a trademark on the part of the student; first, not to cheat, and second, not to enable others to cheat.

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

Conduct – Interim Due Process Suspension
If a student’s misconduct gives cause for belief that the physical or emotional safety of any member of the College community is threatened or that any personal or public property is jeopardized, the student’s right to be on campus can be immediately suspended. A suspension of this type is called an Interim Due Process Suspension. Interim Due Process Suspensions will take effect immediately upon direction of the 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 4415 and 7820, as well as the Drug-Free Schools and Communities Act Amendments of 1989 (20 U.S.C. 3171, et seq.), the following regulations are effective immediately:

1. Students, employees, and guests may not manufacture, distribute, dispense, possess, or use alcoholic beverages on College premises.

2. Students, employees, and guests may not unlawfully possess, use, or distribute controlled substances and alcohol on College premises or when engaged in College activities such as conferences or field trips.

3. No College funds will be used for the purpose of purchasing alcoholic beverages or controlled substances.

4. Being under the influence of alcohol or any controlled substance while on College premises or engaged in College activities is prohibited.

5. Students, employees, and guests are personally accountable for knowledge of federal, state, and local laws relating to alcoholic beverages and controlled substances, the minimum drinking age, transporting open containers of alcoholic beverages, and false representation of age by a minor.

6. As a condition of his or her employment, each employee of the College shall agree to abide by the terms contained within this policy. Violation of any of these terms by College employees may result in disciplinary action, up to and including termination. The College may require satisfactory participation in a substance or alcohol abuse assistance or rehabilitation program for an employee who violates any of the prohibitions listed above.

7. As a further condition of his or her employment, each employee of the College shall agree to notify the College of any criminal drug statute conviction for a violation occurring on College premises or while engaged in College activities, no later than five (5) days after such a conviction. Upon receiving notice of such conviction, the College shall take appropriate disciplinary action within thirty (30) days thereafter.

8. Violation of this regulation by students may result in disciplinary action up to and including expulsion from the College and referral for prosecution. A lack of legal conviction or relevant laws is not a defense in a charged violation of this regulation.

9. Guests on College premises are expected to follow the above requirements. Failure to do so may result in a request to leave College property or College activities.

10. In the spirit of providing a safe, healthy and drug-free environment, the College will:
   a. Continue to offer educational programs that support a drug-free campus and workplace as a normative social value;
   b. Continue to offer opportunities for substance abuse counseling accessible by students and College employees;
   c. Continue to make referrals to appropriate counseling professionals and/or agencies within the community to help students and employees who may benefit from such counseling;
   d. Incorporate in classes throughout the curriculum, where appropriate.
references and class-related assignments related to the medical, legal, social, and wellness issues inherent in a drug-free campus and workplace.

11. Substance abuse is a serious but treatable condition or disease that can lead to short-term or long-term physical and psychological consequences, including but not limited to dependence, damage to the nervous system, heart and respiratory conditions, and death.

12. A "controlled substance" is defined as one: 1) which is not legally obtainable; 2) which is being used in a manner different from that prescribed; or 3) which is legally obtainable but has not legally been obtained. (21 U.S.C.821.MCLA, 333.7101, et seq.)

13. A "conviction" under this policy is defined as a defendant pleading guilty or no contest and/or a guilty finding by a court of law.

Examinations

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

Field Trips

Students participating in all College-sponsored activities, including field trips and athletic events, must abide by all College rules. Student organization field trip 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 these policies and procedures may be put on probation and suspended if appropriate.

Fighting

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

Financial Responsibility

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

Games and Recreational Activities

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

Guest Speakers

College regulations with respect to the participation of guest speakers are outlined in the Policy for Guest Speakers. The College requires orderly conduct, 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 current I.D. card whenever they check out books at the College library, use the Abel B. Sykes TIC Computer Lab, etc., or when they are requested by a member of the faculty or staff of the College. Misuse of College identification to obtain privileges to which the student or to which others are not entitled under existing regulations is a College offense that may result in suspension or dismissal.

Laws

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

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

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

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

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

Obstructing and Jostling

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

Organizations

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

Pets

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

Plagiarism

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

Records

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

In continuing compliance with the Michigan Clean Indoor Air Act, P.A. 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. Periodically completing Student Evaluation Forms at the conclusion of courses. The forms are distributed by a person other than the instructor, and the instructor is not present at the time the students complete the forms.

2. Serving on various councils, boards, and committees of the College in order to provide input and student perspective in the development and evaluation of both instructional and support-service programs. These councils, boards, and committees are located in the various divisions of the College. Those students who have interests 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 computer or media resources, materials, equipment, buildings, or grounds of the College, is inconsistent with the objectives of the College and good citizenship and will result in disciplinary action.

Video Cassette

The federal copyright law, Title 17 of the United States Code, provides copyright protection of "original works of authorship," including "motion pictures and other audiovisual works." Thus, the use of video cassettes and films is restricted to private showings, and public showings are prohibited without the copyright owner's consent. Under the "fair use" limitation, copyrighted cassettes, motion pictures, and other audiovisual works may be used for purposes such as teaching (including multiple copies for classroom use), scholarship, or research without violation. 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, fences and other athletic equipment intended for such use, nor shall it apply to persons holding concealed weapons permits and duly constituted police officers who are authorized by law to carry weapons.

CRIMINAL AND/OR CIVIL ACTIONS

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

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

DUE PROCESS

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

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

Due Process is the guarantor of student civil rights under the Constitution of the United States and the laws and regulations of Michigan and Lansing Community College. Due Process is that process which prevents rights from being taken away from an individual without a fair hearing. Any questions regarding Due Process should be directed to the Office of the Dean of Student Relations at (517) 489-1183.

Student Appeals and Complaints

LCC students may initiate Due Process through established appeal and complaint procedures. In the appeal process, students may appeal disciplinary action or academic decisions. In the complaint process, students may lodge complaints regarding persons, policies, or procedures at the College. The Judicial Board will hear cases referred to it by administrative officers of the College or by individual students through the established appeal and complaint processes. The student has the right to request a public or private hearing, but the decision rests with the College, after considering the wishes of the parties involved.

Student Appeals

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

1. The student may speak with the person who initiated the decision or action in question and request a reconsideration.
2. If the student is not satisfied with the resolution proposed by the person who initiated the decision or action, he or she may speak with the head of the department in which the decision or action in question was initiated and request assistance in resolving this issue.
3. If the student is not satisfied with the resolution proposed by the head of the department, he or she may speak with the dean (or his or her designee) of the division in which the decision or action in question was initiated and request assistance in resolving this 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 at the College. The line of formal appeal to be followed will depend upon the type of case involved. In all cases, students are encouraged 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 line of appeal to be used in each case.

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

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

If a decision is made to proceed with 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 (e.g., 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 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 Nonattending, Lack of Course Prerequisites, or Inappropriate Classroom Behavior)

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

a. The dean of the division involved (or his or her designee)

b. Judicial Board of the College

c. President (or his or her designee).

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

4. Student Appeal of Educational Records

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

a. The director or leader of the department responsible for the record (or his or her designee)

b. The dean of the division involved (or his or her designee)

c. The Judicial Board of the College

d. The President (or his or her designee)

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

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

Student Complaints

Before initiating the formal appeal process at the divisional level, students are encouraged to first meet with the initial decision-maker (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 or discrimination (which is found in this catalog under student and staff Sexual Harassment and Discrimination)—the student is encouraged to use the following line of appeal:

a. The dean of the division involved (or his or her designee)

b. The Judicial Board of the College

c. The President (or his or her designee).

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

Judicial Board

Due Process is the guarantee of student civil rights under the Constitution of the United States and the laws and regulations of Michigan and Lansing Community College. Due Process is that process which prevents rights from being taken away from an individual without a fair hearing. The student has the right to request a public or private hearing, but the decision rests with the College, after considering the wishes of the parties involved.

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

1. Prior to a Judicial Board hearing, the student shall be entitled to the following:

a. Written notification of the time and place of the hearing;

b. A written statement of a decision rendered and/or charges so that the student may prepare his or her defense;

c. Written notification of the names of the witnesses directly responsible for having reported the alleged violation OR written notification of how the alleged violation came to the College's attention.

2. In hearings involving more than one student, the Chairperson of the Judicial Board, at his or her discretion, may permit the hearings concerning each student to be conducted separately.

3. The student shall be entitled to appear in person and present his or her defense to the Judicial Board and may call witnesses on his or her behalf. The student may waive the right to appear before the Judicial Board. Should he or she elect not to appear, the student shall be considered to have waived the right to appeal, and the decision at the prior level stands.

4. The student shall be entitled to be accompanied by a person of his or her choice. If this person is in the form of legal counsel, the student must notify the Office of the 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 to participate directly in any hearing before a Judicial Board.

6. All procedural questions are subject to the final decision of the chairperson of the Judicial Board.

7. Admission of any person to the hearing shall be at the discretion of the Chair of the Judicial Board.

8. The student shall be entitled to an expedient hearing of his or her case.

9. The student shall be entitled to receive the decision of the Judicial Board in writing.

10. The College shall make a record of the hearing. The record shall be the property of the College.

11. A student who wishes to contest the decision of the Judicial Board may
request that the President of the College (or his or her designee) review the decision of the Judicial Board. The student must request this review within 10 (ten) scheduled class days (excluding Saturday and Sunday) of notification of the Judicial Board's decision. Decisions rendered by the President (or his or her designee) will be final.

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

Membership of the Judicial Board

The Judicial Board will consist of the following members:

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

Regulation Revisions and Additions

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

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 off-campus events. Sexual harassment is defined in the Equal Employment Opportunity Commission's guidelines and the Michigan Elliott-Larsen Civil Rights Act (ML 37.2101, et seq., as amended) as follows:

1. Unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct or communications of a sexual nature when:
   a. Submission to such conduct or communication is made a term or condition of an individual's employment, public accommodations or public services, education, or housing.
   b. 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.
   c. 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.

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 purposes 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 forth informal complaints or desire to file a formal complaint regarding sexual harassment, racial harassment, and all other allegations of discrimination. The investigation of these complaints will be handled through the Office of Equal Opportunity and Diversity Programs, 2576, telephone (517) 483-5532.

I. Responsibility to Report

Sexual harassment and allegations of 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/Retrissal

It is unlawful for any individual (student or staff) to be subjected to retaliation or discipline because he or she has opposed any practice, made a charge, testified, assisted or participated in any investigation!act finding 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) 483-5532. Complaint forms are available in the offices of College Human Resources, Divisional Deans, Vice Presidents, and Equal Opportunity. Students and staff should not investigate or discuss the complaint with others. Confidentiality should be maintained by all involved in the complaint to protect the credibility and integrity of the fact finding process.

After receiving a complaint, the Director of Equal Opportunity may investigate

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the complaint or designate a person or persons who have been trained to investi-
gate the alleged complaint.

A. Functions of Investigation Teams
The responsibilities of the Investigation Teams are:
1. To help educate the Lansing Community College faculty, staff, and students about sexual harassment/discrimination.
2. To assist in the investigation of complaints of sexual harassment/discrimi-
nation 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 (twenty) working days following the receipt of the sexual harassment/discrimination complaint form or immediately following a request from the EO Officer.

C. Complaints
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 practical or if appropriate, within the timelines 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 discrimi-
nation/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 guar-
anteer confidentiality beyond the limits of the investigation.

At each stage of the procedure, the College will take appropriate action to protect the privacy of students 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 wit-
esses 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 discip-
linary action up to and including dismissal or expulsion.

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

STUDENT LIFE PROCEDURES

POSTER REGULATIONS FOR STUDENTS
AND STUDENT ORGANIZATIONS

Lansing Community College is continually sensitive to the fact that there is a need for students, staff, and offices to communicate regarding various activities, events, and services. The College is also sensitive to the right of freedom of expression, particularly as provided for in the First Amendment of the Constitution of the United States. At the same time, the College is responsible for providing reasonable procedures and regulations to protect public and private property, and provide for the general safety and welfare of all members of the College commu-
nity, 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, Colleges 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” sub-
ject to unregulated use by any and all individuals. This regulation is designed to facilitate communication through the use of posters while complying with the legis-
lated institutional mission of the College.

DEFINITION: A poster is any written communication designed to apply to a wall or other surface for the purpose of relating information about an event, ser-
vice, 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 reason-
able 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 previ-
ously posted approved poster whose take-down date has not expired.
7. The removal of posters at or prior to the take-down date shall be respon-
sibility 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 responsibil-
ities of the freedom of expression regarding the contents of posters. The content of posters shall avoid the 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 of the Office of Student Life for compliance with general regulations.
10. College staff and faculty must gain approval in their departmental office or from the office of their administrative supervisor.
11. Student and College staff personal notices placed in designated bulletin boards within the College buildings do not need approval. Examples of per-
sonal notices are selling used books, sharing a ride, sharing an apartment, and selling personal articles. Profit-making commercial notices are not con-
sidered 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 in violation of this regu-
lation, an informal appeal may be made by the poster sponsor to the Director of Student Relations. A meeting will be held between the appealing poster spon-
or or sponsors with the Director of Student Relations to discuss the appeal. If the appeal is not resolved, a formal appeal may be presented to the Director of Student Relations. This appeal must be in writing, must indicate the reason(s) for the appeal, and must be dated and signed by the appealing party. The Director of Student Relations will gather information and respond to the appealing party within five (5) days of receipt of the appeal. If the student or student organization is not satisfied with the response of the Director of Student Relations, a second written appeal may be made to the Dean of Student and Academic Support Division. This written appeal must contain the reason(s) for the appeal, and a copy of the poster must be made available to the Dean of Student and Academic Support Division for review. The appeal to the Dean of Student and Academic Support Division must be dated and signed by the appealing party. The Dean of Student and Academic Support Division will gather information and respond to the appealing party within five (5) days of receipt of the appeal, giving the decision rendered and reason(s) therefore. The decision of the Dean of Student and Academic Support Division shall be final.
Poster Regulations for Off-Campus Organizations and Individuals

Lansing Community College is sensitive to the fact that there is a need for some off-campus organizations and individuals involved in non-commercial enterprises to communicate with Lansing Community College students and staff members concerning various activities, events, and services. The College is also sensitive to the right of expression, particularly as provided for in the First Amendment of the Constitution of the United States. At the same time, the College is responsible for providing reasonable procedures and regulations to protect public and private property and provide 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 in this kiosk without seeking prior approval from any College office, and the College disclaims any and all responsibility for items posted.

REGULATIONS FOR USE OF STUDENT LITERATURE TABLE

Lansing Community College is continually aware of and supportive of the concepts of freedom of expression, particularly those provided by the First Amendment of the Constitution of the United States. The College also 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 legitimate instructional mission of the College to serve the citizens of the College community. The following procedural regulations shall be followed:

1. The distribution of literature within College buildings shall be limited to student literature tables made available for such distribution. Student literature tables will be made available in the following areas within the College buildings:
   a. In the entry lobby outside the second floor cafeteria of the Arts and Sciences Building.
   b. In the second floor lobby of the Gannon Vocational-Technical Center.
   c. In the second floor lobby area of the Old Central Building.
   At least two single tables will be available in each of these areas. The maximum number of tables made available in any area will be determined in a reasonable manner based on the use of the area and regulations regarding fire safety and student welfare.

2. Only registered students and College-recognized student clubs and organizations shall have access to the student literature tables. Non-students who wish to use college facilities must gain permission by following procedures established for this purpose through the Student Life Office.

3. The student literature tables will be available Mondays through Thursdays from 8 A.M. to 10 P.M., and Fridays and Saturdays from 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 2 hours prior to the time of desired use. Registrations will be accepted on a first-request-first serve basis. Individual students and recognized student clubs or organizations may register for the use of a table for three consecutive days. If there are no pending requests, a registration may be renewed at the end of a previous registration. If there are no pending requests, a recognized student club or organization may request the use of more than one table or more than one location. If 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 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 registration. 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 tables will be staffed at all times by the individual student or members of the recognized student club or organization registered for the use of the tables while the distribution of materials is taking place. The registered student or recognized club or organization will have the responsibility to ensure that the distribution process is orderly at all times and that the general area surrounding the student literature tables is not littered.

8. Individuals shall have the option to pick literature from the tables or receive a copy from the individuals sitting at the tables. No literature shall be forced upon any individual nor shall there be any obstructions created in the path of the general flow of traffic.

9. Individual, students or recognized student clubs and organizations may collect funds for worthy causes, such as muscular dystrophy, blood drives, or College-sponsored activities. There shall be no commercial solicitations of funds or business, nor shall individual students solicit funds for personal gain.

10. The College has the right and responsibility to halt the distribution of literature which it believes to be libelous, obscene, or an invasion of privacy, or literature designed and reasonably believed that it will have the effect to cause immediate disruption of classes, violence, or substantial disorder of the College operations of the College.

11. Failure to comply with the above procedural regulations may lead to the denial of the use of the student literature tables and/or may lead to disciplinary action.

Literature Table Use Request Flow Chart

- **INDIVIDUAL STUDENT**
  - Register for reservation for use of table.
  - Have Director of Student Life review copy of literature.
  - Place copies of literature on file in Student Life Office.
  - Have a copy of requisition form at table while distributing literature.
  - 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 Director of Student Relations within 10 calendar days of the denial or requirement to halt distribution. The Director of Student Relations shall make a prompt investigation of the appeal, contacting the parties involved, and, within 10 calendar days of the date of appeal, make a decision to reinstate the distribution rights denied or halted or to uphold the original decision. If the decision of the Director of Student Relations is not satisfactory, the individual student or recognized student club or organization may appeal the decision to the College Student Services Council. This second appeal must be in writing and presented to the Chairperson of the College Student Services Council within 10 calendar days of the decision of the Director of Student Relations. The College Student Services Council shall make a prompt investigation and decision.
and shall within 10 calendar days from the date of the appeal, make a decision to
reinstate the distribution rights or upholding the denial or required half of distribu-
tion. The decision of the College Student Services Council shall be final.

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

Appeal of Denial Flow Chart

STUDENT OR
ORGANIZATION
DENIED USE

DIRECTOR OF
STUDENT RELATIONS

COLLEGE STUDENT
SERVICES COUNCIL

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 conduc-
tive to learning.
3. The College will provide a clear and fair process for handling student com-
plaints and concerns.
4. Faculty will be articulate and enthusiastic about their field and will estab-
lish a positive, stimulating learning atmosphere.
5. Faculty will prepare for each class; organize course concepts and present
them clearly; exhibit comprehensive knowledge of the subject; teach the
application of skills appropriate to course content; and make appropriate
and timely use of student and instructional support services.
6. Faculty will respect students as individuals, recognizing learning styles and
managing student learning accordingly.
7. Faculty will encourage classroom discussion when appropriate and rep-
resent various sides of an issue.
8. Faculty will make a standard course syllabus available to students at the
beginning of the semester, provide appropriate instructional materials and
assistance, and meet classes at the scheduled times.
9. Faculty will evaluate students fairly and objectively, maintain records of
student achievement, and keep students informed of their progress.
10. Faculty will encourage students to think intelligently and independently.
11. Faculty will be available to assist students outside the classroom, includ-
ing during regularly scheduled and posted office hours.
12. Faculty will know curriculum program requirements and general career
opportunities in their field. They will be able to advise students in their pro-
gram area and refer students for academic 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 behav-
iors 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 posi-
tive learning atmosphere;
   f. Contributing effectively to class activities.
2. Students will be academically and intellectually honest in all classes, ex-
aminations, 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, Respon-
sibilities, 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 comprehen-
sive listing, descriptions, and locations of all special programs and services
available at the College, students should consult The Student's Handbook. Coa-
ties of The Student's Handbook may be obtained from the Student Life Office,
Room 200F, Gannon Vocational-Technical Center.

Career and Employment Services (CES) assists individuals with career
choices and planning, job search activities, and career and professional goals.
Licensed Professional Counselors are available to assist with the planning,
changing, or confirming of a job or career. All activities, from making initial in-
quiries to developing a career plan, take place with the assistance of a licensed
counselor and experienced staff. Areas of specialization include career counsel-
ing, assessment, decision-making and planning assistance, and licensure
and licensure testing. To assist in the job search and acquisition of information
(including Web-based information), CES provides counseling, resume develop-
ment, reference material and consultation, and other activities related to
successful and employment. A Web-based job posting system is available
for use by students and alumni and consists of all jobs posted with the college.
Access to the system is available 7 days a week, 24 hours a day via the Internet.
CES also assists in the placement of students in student employment jobs for
the College.

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

Extension and Community Education provides LCC classes conducted in
locations within a 40-mile radius of the College's main Lansing campus. A week-
degree program is also offered in certain locations. Information and services
about distance learning, off-campus classes and extension centers is provided
by the Extension and Community Education Office.

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

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

Library Information Services provides information and research assis-
tance, library resources, a computerized catalog, interlibrary loan service, book
renewals by phone, Library orientations, and Internet access to the library cata-
log and electronic databases from on and off-campus. The library also has 600
study seats, including 33 multimedia and 18 group study rooms.
The Multicultural Center advocates for minority students and facilitates their access to appropriate services to ensure their career and academic success. Programs within the Multicultural Center include:

- **The Limited English Proficiency Program**—provides counseling, academic advising, registration assistance, financial assistance, and intensive English training for students with limited English skills.
- **Minority Outreach and Recruitment**—assists in the recruitment of 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 events; observations and celebrations; and serves as an advocate on behalf of minority students.
- **Native American Leadership Program (NALP)**—provides counseling and academic advising and assistance with admissions, registration, and financial aid for Native American students.
- **Mentoring Program**—provides mentors for first-semester students to advise and support them during their time of transition and adjustment to Lansing Community College.

The Student Life Office enhances student leadership, development, and success through involvement in and exposure to diverse experiences and opportunities. These include Student Senate, a comprehensive student leadership development experience; counseling of the Student Advisory Committee to the President; Student Organization Council, and the Student Leadership Academy; student clubs and organizations; student activities, such as low-cost travel opportunities, campus programming of guest events, and student workshops, lectures, and forums; and opportunities to work on the staff of The Loop, 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, supplemental instruction, 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 at Disability Support Services (517) 483-1904 (Voice), or (517) 482-1207 (Voice/TTY). The College adheres to the standards and guidelines set forth in the Americans With Disabilities Act.

To be eligible for services and accommodations through ODSS, students are required to provide written verification of their disability. Documentation must be signed and dated by a qualified professional who has diagnosed the disability. If necessary, the ODSS staff can help students find the appropriate professionals to diagnose their disability. Starting fall semester 2000, students must have documentation of a disability on file in ODSS offices before services and accommodations for classes can be provided.

Handicap-accessible parking is available and clearly identified at Lansing Community College. For more information, call the office of Parking Services at (517) 483-1796.
Mission/Purpose of the Business & Community Institute

We deliver customized business and professional development services that contribute to our customers’ success. We build partnerships for workforce, economic and community development.

What BCI Can Do for You

The Business & Community Institute (BCI) can work with your business or organization to develop the training and business solutions needed in today’s business climate. BCI provides customized training and consulting in a wide variety of leadership, management, supervisory, and technical areas.

BCI’s account executives will help you to identify training programs that will increase productivity and reduce costs at your company or that will help you to meet your staff members’ professional continuing education goals. BCI specializes in designing custom training programs to meet the workforce development needs of a variety of organizations. Employees of more than 350 different organizations have used these services in the past year.

Types of Programs and Services Offered

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

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

- Small Business Development
- Microcomputer Software Applications/Business Software
- Technical Skills
- Human Resource Development
- Quality Assurance and Productivity Improvement
- Nursing and Dental Continuing Education
- EMT/Paramedic and Allied Health Training
- Criminal Justice
- Leadership and Management Skills
- Computer-Aided Design and Computer-Aided Manufacturing (CAD/CAM)
- Continuing Medical Education for Physicians (New)

Where Programs Are Offered

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

Let BCI staff partner with you to meet your business needs in a cost-effective way. Call the Business & Community Institute at (517) 483-1857. Or call LCC’s toll-free line at 1-800-644-4LCC and ask to be connected to the BCI today.
Degree and Certificate Programs
ASSOCIATE IN ARTS DEGREE

EFFECTIVE FALL 2000-SUMMER 2005

This is 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-Nursing
- Humanities
- Secondary Education
- Criminal Justice
- International Studies
- Social Science
- Pre-Economics
- Liberal Arts
- Sociology
- Elementary Education
- Literature
- Speech Communication

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

Students should see the Course Descriptions section of this catalog or the Course Schedule for course prerequisites 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 enrolling in any of the curriculum students should see an academic advisor or counselor in the Counseling and Advising Center (Room 2009, Cannon Hall Building). Telephone number (517) 483-1924. Obtain an appropriate transfer guide (also in the Counseling and Advising Center) and contact the school to which they will transfer for specific transfer extension requirements. (See Transfer Information in the section of the Catalog for a list of institutions for which transfer guides are available.)

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

I. GENERAL EDUCATION REQUIREMENTS

Minimum 35 credits

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

- Lansing Community College General Education Core Requirements in the areas of mathematics, global perspectives and diversity, writing, science and technology, and speech communication. (Complete information about LCC Core requirements can be found on page 23 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 the Associate in Arts Degree.

Students who complete Core requirements other than those indicated below, and who wish to apply those credits toward an Associate in Arts Degree, should contact a faculty advisor or counselor in Room 2100 of the GVT Building, telephone number (517) 483-1111.

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

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

1. English Composition

Minimum 8 credits

By 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), *WRIT 131 (4), and
- Complete one course from the following: *WRIT 122 (4), *ENG1 122 (4), or
- WRIT 122 (4) or *ENG1 122 (4) or
- If WRIT 121 is elected, select ENG1 122 or WRIT 122 and a second WRIT or ENG1 course with a number of 200 or higher.

2. Science and Mathematics

Minimum of 6 credits

Completing at least one asterisk (*) course from A or B will satisfy the LCC General Education Core Requirement in science and technology. Completing any asterisk (*) course from C will satisfy the LCC General Education Core Requirement in mathematics. If C is not chosen, then the LCC Core requirement for mathematics must be met by one of the options described on page 23 of this catalog.

A minimum of 6 credits must be chosen from the three categories below (A, B, C):


3. Social Science

Minimum of 8 credits

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

- Complete one course in Political Science: the following: POLS 120 (4) or POLS 121 (4)
- Complete 4-6 credits from the following: ANTH 270 (3), ECON 120 (4), ECON 201 (3), ECON 202 (3), GEOG 120 (4), GEOG 200 (4), POLS 260 (3), PSYC 200 (4), PSYC 202 (3), PSYC 203 (2), PSYC 206 (3), PSYC 205 (3), "SOC 120 (4), SOC 255 (3)

4. Humanities

Minimum 8 credits

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

- Complete one of the following combinations: HIST 211 and HIST 212 or 214, *PHIL 211 and 212, HUM 213 and 214, RELG 211 and 212, *ENGL 211 and 212, or
- Complete eight (8) credits from the list below in different areas (Note that MUD does not accept Foreign Language as meeting the MACRAO Integrative Studies Humanities requirement.)
- Art History, HUM 120, *211, 212
- Foreign Language, FREN 201, 202, GRMN 201, 202, JAPN 201, 202, SPAN 201, 202
- History, HIST 120, 211, 212, 214, 220, 230, 240, 250, 260
- Humanities, HUM 100, 213, 214, 215
- Literature, ENGL 201, 202, 203, 211, 212, 255, 256, 260, 266, 267, 270, 270
- Performing Arts, MUSC 199, 200, 241, HUM 210
- Philosophy, PHIL 151, 152, 153, 211, 212, 260
- Religion, RELG 211, 212, 241, 242, 250

5. Speech

Minimum 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 fulfill toward an Associate in Arts Degree. Some concentrations also contain Limited Choice Electives which are presented at the end of this section. Courses should be selected in consultation with an academic advisor or counselor to determine their transferability to a specific four-year school. Credits for each course have been indicated in parentheses.
PRE-ACCOUNTING  
Curriculum Code: 0254

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

2. Complete MATH 121 to satisfy part of the Science and Mathematics General Education Requirements.

3. Complete the following required courses (15 credits):
   - ACCG 210 Principles of Accounting I (4)
   - ACCG 211 Principles of Accounting II (4)
   - MATH 141 Calculus with Applications (3)
   - STAT 215 Intro to Probability and Stats (4)

4. Complete one of the following (3–4 credits):
   - CIS 190 Intro to Computer Info Systems (3)
   - CIS 192 Intro to Programming/Logic (4)
   - CPSC 120 Introduction to Computers (3)

5. Complete one of the following (3 credits):
   - MATH 122 College Algebra II and Trig (3)
   - MATH 123 Finite Mathematics (3)

6. Complete a minimum of 2–3 credits from the list of Limited Choice Electives at the end of this section.

AFRICAN AMERICAN HISTORY  
Curriculum Code: 0137

1. Complete courses other than HIST 211, HIST 212, and HIST 214 to satisfy the Humanities General Education Requirement.

2. Complete the following required courses (20 credits):
   - HIST 150 African-American History (4)
   - HIST 211 U.S. History to 1877 (4)
   - HIST 212 U.S. History: 1877 to Present (4)
   - HIST 214 African History (4)
   - HIST 280 Conflict & Revolution in South Africa (4)

3. Complete a minimum of 7 credits from the following:
   - ENGL 260 African-American Literature (4)
   - SOCL 255 Contemporary Social Problems (3)
   - Any foreign language with course numbers 121, 122, 201, or 202 (4)

AMERICAN STUDIES  
Curriculum Code: 0142

1. Complete courses other than HIST 211, HIST 212, and HIST 214 to satisfy the Humanities General Education Requirement.

2. Complete the following required courses (20 credits):
   - ENGL 255 American Literature I (4)
   - ENGL 256 American Literature II (4)
   - HIST 211 U.S. History to 1877 (4)
   - HIST 212 U.S. History: 1877 to Present (4)
   - HUMS 215 American Civilization (4)

3. Complete a minimum of 8 credits from the following:
   - ENGL 290 African-American Literature (4)
   - HIST 150 African-American History (4)
   - HIST 220 Michigan History (4)
   - POLS 120 American Political System (4)

ART HISTORY  
Curriculum Code: 0746

1. Complete HIST 211 or HUMS 213 and complete HIST 212, HIST 214 or HUMS 214 to satisfy the Humanities General Education Requirement.

2. Complete the following required courses (20 credits):
   - HUMS 160 Mythology (4)
   - HUMS 211 History of Art I (4)
   - HUMS 212 History of Art II (4)
   - RELG 211 World Religions I (4)
   - RELG 212 World Religions II (4)

3. Complete a minimum of 8 credits from the following:
   - ENGL 211 World Literature I (4)
   - ENGL 212 World Literature II (4)
   - HUMS 120 Western Art and Music History (4)
   - Any foreign language with course numbers 121, 122, 201, or 202 (4)

PRE-BUSINESS  
Curriculum Code: 0232

1. Complete ECON 201 and ECON 202 in addition to POLS 120 or POLS 121 to satisfy the Social Science General Education Requirement.

2. Complete MATH 121 to satisfy part of the Science and Mathematics General Education Requirement.

3. Complete the following required courses (11 credits):
   - ACCG 210 Principles of Accounting I (4)
   - ACCG 211 Principles of Accounting II (4)
   - BUSN 118 Introduction to Business (3)

4. Complete one of the following (3 credits):
   - CIS 190 Intro to Computer Info Systems (3)
   - CPSC 120 Introduction to Computers (3)

5. Complete one of the following (3–4 credits):
   - ECON 213 U.S. Economic/Business History (3)
   - MATH 141 Calculus with Applications (3)
   - MATH 151 Calculus I (4)
   - PSYC 200 Introduction to Psychology (4)
   - SOCL 120 Introduction to Sociology (4)
   - STAT 215 Intro to Probability and Stats (4)

6. Complete a minimum of 5–6 credits from the list of Limited Choice Electives at the end of this section.

CRIMINAL JUSTICE  
Curriculum Code: 0148

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

2. Complete a minimum of 10 credits from the following:
   - CJUS 255 Human Relations/Criminal Just (3)
   - PSYC 200 Introduction to Psychology (4)
   - PSYC 202 Psychology of Personality (3)
   - PSYC 203 Social Psychology (3)
   - PSYC 205 Human Growth and Development (3)
   - PSYC 250 Abnormal Psychology (3)
   - SOCL 120 Introduction to Sociology (4)
   - SOCL 255 Contemporary Social Problems (3)
   - SOCL 260 Minority Groups (3)
ASSOCIATE IN ARTS DEGREE

PRE-ECONOMICS

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

ELEMENTARY EDUCATION

1. Complete POLS 120 and SOCL 120 to satisfy part of the Social Science General Education Requirement.
2. Complete the following required courses (21 credits):
   - ARTS 240 Art for Elementary Teachers (3)
   - EDUC 201 Teacher Education Practicum (2)
   - MATH 201 Math for Liberal Arts I (3)
   - MUSC 200 Music Fund for Elem Teachers (3)
   - PSYC 200 Introduction to Psychology (4)
   - PSYC 204 Educational Psychology (3)
3. Complete 4-6 credits from the following list:
   - ANTH 270 Cultural Anthropology (3)
   - GEOG 121 Physical Geography (3)
   - GEOG 200 World Regional Geography (4)
   - ENGL 220 Science Fiction (4)
   - ENGL 255 American Literature I (4)
   - ENGL 256 American Literature II (4)
   - ENGL 267 British Literature II (4)
   - PSYC 205 Human Growth and Development (3)
   - PSYC 221 Child Psychology (3)
   - SOCL 200 Minority Groups (5)

FINE ARTS

1. Complete HUMS 211 and HUMS 212 to satisfy the Humanities General Education Requirement.
2. Complete the following required courses (12 credits):
   - ARTS 102 2-Dimensional Design (3)
   - ARTS 103 3-Dimensional Design (3)
   - ARTS 131 Drawing I (3)
   - ARTS 132 Life Drawing (3)
3. Complete 8 credits from the following:
   - ARTS 140 Printmaking I (4)
   - ARTS 141 Printmaking II (4)
   - ARTS 145 Screen Printing I (4)
   - ARTS 146 Screen Printing II (4)
   - ARTS 201 Painting I (4)
   - ARTS 202 Painting II (4)
   - ARTS 204 Watercolor I (4)
   - ARTS 205 Watercolor II (4)
4. Complete a minimum of 7 credits from the list of Limited Choice Electives at the end of this section.

FOREIGN LANGUAGE

1. Complete the following required course (3 credits):
   - SPCH 260 Intercultural Communication (3)
2. Complete one of the following four choices (A, B, C, D) (16 credits):
   A. FREN 121 Elementary French I (4)
   FREN 122 Elementary French II (4)
   FREN 201 Intermediate French I (4)
   FREN 202 Intermediate French II (4)
   B. GRMN 121 Elementary German I (4)
   GRMN 122 Elementary German II (4)
   GRMN 201 Intermediate German I (4)
   GRMN 202 Intermediate German II (4)
   C. JAPN 121 Elementary Japanese I (4)
   JAPN 122 Elementary Japanese II (4)
   JAPN 201 Intermediate Japanese I (4)
   JAPN 202 Intermediate Japanese II (4)
   D. SPAN 121 Elementary Spanish I (4)
   SPAN 122 Elementary Spanish II (4)
   SPAN 201 Intermediate Spanish I (4)
   SPAN 202 Intermediate Spanish II (4)
3. Complete a minimum of 8 credits of any foreign language with course numbers 121, 122, 201, or 202 other than those chosen as the major language of concentration from the choices in Number 2 above.

GEOGRAPHY

1. Complete GEOG 200 to satisfy part of the Social Science General Education Requirement.
2. Complete the following required courses (6 credits):
   - GEOG 120 Introduction to Geography (3)
   - GEOG 121 Physical Geography (3)
   - GEOG 202 Geography of North America (3)
3. Complete a minimum of 16 credits from the following:
   - ANTH 270 Cultural Anthropology (3)
   - ECON 120 Power, Authority and Exchange (4)
   - GEOG 260 Economic Geography (3)
   - GEVT 205 Principles Geographic Info Sys (3)
   - METR 220 Introduction to Meteorology (4)
   - POLS 260 Comparative Political Systems (3)
   - POLS 270 International Relations (3)
   - SOCL 120 Introduction to Sociology (4)
   - STAT 170 Introduction to Statistics (3)
   Any foreign language with course numbers 121, 122, 201, or 202 (4)

40 • LANSING COMMUNITY COLLEGE CATALOG 2000–2001
## HISTORY

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>HIST 211</td>
<td>U.S. History to 1877</td>
<td>4</td>
</tr>
<tr>
<td>HIST 212</td>
<td>U.S. History: 1877 to Present</td>
<td>4</td>
</tr>
<tr>
<td>HIST 214</td>
<td>African History</td>
<td>4</td>
</tr>
</tbody>
</table>

Complete the following required courses (12 credits):

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 211</td>
<td>U.S. History to 1877</td>
<td>4</td>
</tr>
<tr>
<td>HIST 212</td>
<td>U.S. History: 1877 to Present</td>
<td>4</td>
</tr>
<tr>
<td>HIST 214</td>
<td>African History</td>
<td>4</td>
</tr>
</tbody>
</table>

Complete a minimum of 16 credits from the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ENGL 255</td>
<td>American Literature I</td>
<td>4</td>
</tr>
<tr>
<td>ENGL 256</td>
<td>American Literature II</td>
<td>4</td>
</tr>
<tr>
<td>HIST 150</td>
<td>African-American History</td>
<td>4</td>
</tr>
<tr>
<td>HIST 210</td>
<td>Studies in American History</td>
<td>4</td>
</tr>
<tr>
<td>HIST 220</td>
<td>Michigan History</td>
<td>4</td>
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<tr>
<td>HIST 230</td>
<td>British History</td>
<td>4</td>
</tr>
<tr>
<td>HIST 260</td>
<td>Conflict &amp; Revolution</td>
<td>4</td>
</tr>
<tr>
<td>RELG 250</td>
<td>Religions of East Asia</td>
<td>4</td>
</tr>
</tbody>
</table>

## HUMANITIES

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

Complete the following required courses (8 credits):

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HUMS 213</td>
<td>World Civilizations I</td>
<td>4</td>
</tr>
<tr>
<td>HUMS 214</td>
<td>World Civilizations II</td>
<td>4</td>
</tr>
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Complete a minimum of 20 credits from the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 201</td>
<td>Introduction to Poetry</td>
<td>4</td>
</tr>
<tr>
<td>ENGL 202</td>
<td>Introduction to Drama</td>
<td>4</td>
</tr>
<tr>
<td>ENGL 203</td>
<td>Introduction to Prose</td>
<td>4</td>
</tr>
<tr>
<td>ENGL 211</td>
<td>World Literature I</td>
<td>4</td>
</tr>
<tr>
<td>ENGL 212</td>
<td>World Literature II</td>
<td>4</td>
</tr>
<tr>
<td>ENGL 255</td>
<td>American Literature I</td>
<td>4</td>
</tr>
<tr>
<td>ENGL 256</td>
<td>American Literature II</td>
<td>4</td>
</tr>
<tr>
<td>HIST 211</td>
<td>U.S. History to 1877</td>
<td>4</td>
</tr>
<tr>
<td>HIST 212</td>
<td>U.S. History: 1877 to Present</td>
<td>4</td>
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<tr>
<td>HUMS 120</td>
<td>Western Art and Music History</td>
<td>4</td>
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<tr>
<td>HUMS 160</td>
<td>Mythology</td>
<td>4</td>
</tr>
<tr>
<td>HUMS 211</td>
<td>History of Art I</td>
<td>4</td>
</tr>
<tr>
<td>HUMS 212</td>
<td>History of Art II</td>
<td>4</td>
</tr>
<tr>
<td>PHIL 151</td>
<td>Intro Logic &amp; Critical Think</td>
<td>4</td>
</tr>
<tr>
<td>PHIL 152</td>
<td>Intro to Ethics</td>
<td>4</td>
</tr>
<tr>
<td>PHIL 153</td>
<td>Knowledge &amp; Reality</td>
<td>4</td>
</tr>
<tr>
<td>PHIL 211</td>
<td>World Philosophies I</td>
<td>4</td>
</tr>
<tr>
<td>PHIL 212</td>
<td>World Philosophies II</td>
<td>4</td>
</tr>
<tr>
<td>RELG 211</td>
<td>World Religions I</td>
<td>4</td>
</tr>
<tr>
<td>RELG 212</td>
<td>World Religions II</td>
<td>4</td>
</tr>
</tbody>
</table>

## LIBERAL ARTS

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

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>BIOL 210</td>
<td>Natural Resource Conservation</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 135</td>
<td>Chemistry in Society</td>
<td>4</td>
</tr>
<tr>
<td>CPSC 120</td>
<td>Introduction to Computers</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 256</td>
<td>American Literature II</td>
<td>4</td>
</tr>
<tr>
<td>MATH 201</td>
<td>Math for Liberal Arts I</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 152</td>
<td>Intro to Ethics</td>
<td>4</td>
</tr>
<tr>
<td>PSYC 200</td>
<td>Introduction to Psychology</td>
<td>4</td>
</tr>
<tr>
<td>SOCL 120</td>
<td>Introduction to Sociology</td>
<td>4</td>
</tr>
<tr>
<td>SPCH 280</td>
<td>Intercultural Communication</td>
<td>3</td>
</tr>
</tbody>
</table>

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

## LITERATURE

Complete the following required courses (12 credits):

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 201</td>
<td>Introduction to Poetry</td>
<td>4</td>
</tr>
<tr>
<td>ENGL 202</td>
<td>Introduction to Drama</td>
<td>4</td>
</tr>
<tr>
<td>ENGL 203</td>
<td>Introduction to Prose</td>
<td>4</td>
</tr>
</tbody>
</table>

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

**A:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 255</td>
<td>American Literature I</td>
<td>4</td>
</tr>
<tr>
<td>ENGL 256</td>
<td>American Literature II</td>
<td>4</td>
</tr>
<tr>
<td>ENGL 257</td>
<td>African-American Literature</td>
<td>4</td>
</tr>
<tr>
<td>ENGL 258</td>
<td>British Literature I</td>
<td>4</td>
</tr>
<tr>
<td>ENGL 259</td>
<td>British Literature II</td>
<td>4</td>
</tr>
<tr>
<td>ENGL 290</td>
<td>Shakespeare</td>
<td>4</td>
</tr>
<tr>
<td>HUMS 150</td>
<td>Mythology</td>
<td>4</td>
</tr>
<tr>
<td>PHIL 151</td>
<td>Intro Logic &amp; Critical Think</td>
<td>4</td>
</tr>
<tr>
<td>RELG 241</td>
<td>Old Testament Literature</td>
<td>4</td>
</tr>
</tbody>
</table>

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

**B:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDUC 201</td>
<td>Teacher Education Practicum</td>
<td>2</td>
</tr>
<tr>
<td>EDUC 220</td>
<td>Introduction to Education</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 255</td>
<td>American Literature I</td>
<td>4</td>
</tr>
<tr>
<td>ENGL 256</td>
<td>American Literature II</td>
<td>4</td>
</tr>
<tr>
<td>PSYC 200</td>
<td>Introduction to Psychology</td>
<td>4</td>
</tr>
<tr>
<td>PSYC 204</td>
<td>Educational Psychology</td>
<td>3</td>
</tr>
</tbody>
</table>

## INTERNATIONAL STUDIES

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

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

Complete one of the following (3 credits):

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>POLS 260</td>
<td>Comparative Political Systems</td>
<td>3</td>
</tr>
<tr>
<td>POLS 270</td>
<td>International Relations</td>
<td>3</td>
</tr>
</tbody>
</table>

Complete 8 credits of any foreign language with course numbers 121, 122, 201, or 202.
PHILOSOPHY  
Curriculum Code: 0159

1. Complete courses other than PHIL 211 and PHIL 212 to satisfy the Humanities General Education Requirement.

2. Complete the following required courses (12 credits):
   PHIL 151 Intro Logic & Critical Think (4)
   PHIL 211 World Philosophies I (4)
   PHIL 212 World Philosophies II (4)

3. Complete a minimum of 16 credits from the following:
   HUMS 120 Western Art and Music History (4)
   HUMS 213 World Civilizations I (4) (See Note 1)
   HUMS 214 World Civilizations II (4) (See Note 1)
   HUMS 226 Great Lakes Native Amer, Hist & Trad (4)
   PHIL 152 Introduction to Ethics (4) (See Note 2)
   PHIL 153 Knowledge and Reality (4) (See Note 2)
   PHIL 200 Contemporary Ethical Problems (4)
   RELG 250 Religions of East Asia (4)

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

NOTES
1. HUMS 213 and HUMS 214 may be used to fulfill the General Education Requirement if not already selected to fulfill the Humanities General Education Requirement listed in number 1 above.

2. Students may elect to take either PHIL 152 or PHIL 153 but not both.


PSYCHOLOGY  
Curriculum Code: 0215

1. Complete PSYC 200 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 one of the following two courses (3 credits):
   PSYC 203 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 two courses (3 credits):
   PSYC 202 Psychology of Personality (3)
   PSYC 250 Abnormal Psychology (3)

7. Complete a minimum of 10 credits from the following:
   ANTH 270 Cultural Anthropology (3)
   ANTH 271 Medical Anthropology (3)
   CPSC 120 Introduction to Computers (3)
   POLS 240 Introduction to Public Policy (3)
   PSYC 175 Psychology of Death: A Preparation for Living (3)
   PSYC 240 Psychology of Human Sexuality (3)
   SOCL 120 Introduction to Sociology (4)
   SOCL 254 Marriage and Family (3)
   STAT 170 Introduction to Statistics (3)
   STAT 215 Intro to Probability and Stats (4)

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

REPRESENTATION

POLITICAL SCIENCE  
Curriculum Code: 0750

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

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

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

4. Complete a 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 120 Power, Authority and Exchange (4)
   ECON 201 Principles of Economics-Micro (3)
   ECON 202 Principles of Economics-Macro (3)
   GEOG 200 World Regional Geography (4)
   POLS 205 Government Internship (3)
   POLS 240 Introduction to Public Policy (3)
   POLS 250 Amer Pol Parties/Interest Grps (3)
   POLS 270 International Relations (3)
   POLS 280 Politics & Government of Japan (3)
   PSYC 200 Introduction to Psychology (4)
   SOCL 255 Contemporary Social Problems (3)
   SOC 260 Minority Groups (3)
   STAT 170 Introduction to Statistics (3)

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

RELIGION  
Curriculum Code: 0751

1. Complete courses other than RELG 211 and RELG 212 to satisfy the Humanities General Education Requirement.

2. Complete the following required courses (8 credits):
   RELG 211 World Religions I (4)
   RELG 212 World Religions II (4)

3. Complete a minimum of 19-20 credits from the following:
   ANTH 270 Cultural Anthropology (3)
   PHIL 152 Introduction to Ethics (4) (See Note 1)
   PSYC 200 Contemporary Ethical Problems (4) (See Note 1)
   RELG 241 Old Testament Literature (4)
   RELG 242 New Testament Literature (4)
   RELG 250 Religions of East Asia (4)

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

NOTE
1. Students may elect to take either PHIL 152 or PHIL 260 but not both.
SECONDARY EDUCATION  
Curriculum Code: 0752

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

2. Complete the following required courses (12 credits):
   EDUC 220 Teacher Education Practicum (2)
   EDUC 220 Introduction to Education (3)
   PSYC 200 Introduction to Psychology (4)
   PSYC 204 Educational Psychology (3)

3. Complete a minimum of 15 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: 0121

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

2. Complete the following required courses (11 credits):
   ECON 201 Principles of Economics - Micro (3)
   GEOG 200 World Regional Geography (4)
   PSYC 200 Introduction to Psychology (4)

3. Complete one course from two of the following choices (A, B, C, D, E) (6 credits):
   A. ECON 202 Principles of Economics - Macro (3)
   B. GEOG 120 Introduction to Geography (3)
   C. GEOG 121 Physical Geography (3)
   D. GEOG 202 Geography of North America (3)
   E. POLS 240 Introduction to Public Policy (3)
   POLS 250 American Politics and Interest Groups (3)
   POLS 260 Comparative Political Systems (3)
   POLS 270 International Relations (3)

4. Complete one course from two of the following:
   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 233 Abnormal Psychology (3)

   E. ANTH 270 Cultural Anthropology (3)
   ANTH 271 Medical Anthropology (3)
   ANTH 275 Physical Anthropology (3)
   ANTH 276 Human Growth and Development (3)
   SOCL 254 Marriage and Family (3)
   SOCL 255 Contemporary Social Problems (3)
   SOCL 259 Minority Groups (3)

   F. Complete a minimum of 10 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.

SOCIETY  
Curriculum Code: 0753

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

2. Complete the following required courses (9 credits):
   ANTH 270 Cultural Anthropology (3)
   PSYC 203 Social Psychology (3)
   SOCL 255 Contemporary Social Problems (3)

3. Complete a minimum of 16 credits from the following:
   ANTH 271 Medical Anthropology (3)
   ANTH 275 Physical Anthropology (3)
   ANTH 276 World Archaeology (3)
   CJUS 102 Crime Causes and Conditions (3)
   CPSC 120 Introduction to Computers (3)
   ECON 201 Principles of Economics - Micro (3)
   ECON 202 Principles of Economics - Macro (3)
   GEOG 200 World Regional Geography (4)
   GEOG 203 Economic Geography (3)
   GERO 100 Introduction to Aging (3)
   MATH 121 College Algebra I (4)
   POLS 240 Introduction to Public Policy (3)
   POLS 250 Comparative Political Systems (3)
   POLS 270 International Relations (3)
   PSYC 200 Introduction to Psychology (4)
   PSYC 201 Introduction to Psychology (4)
   PSYC 202 Principles of Economics - Macro (3)
   SOC 254 Marriage and Family (3)
   SOC 260 Minority Groups (3)
   SOC 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: 0130

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

2. Complete the following required courses (9 credits):
   SPOC 150 Fundamentals of Public Speaking (3)
   SPOC 210 Fundamentals of Public Speaking (3)
   SPOC 260 Fundamentals of Public Speaking (3)

3. Complete a minimum of 6 credits from the following:
   SPOC 110 Oral Communication in the Workplace (3)
   SPOC 260 Nonverbal Communication (3)
   SPOC 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 Intro: Logic & Critical Thinking (4)
   POLS 260 Comparative Political Systems (3)
   PSYC 200 Introduction to Psychology (4)
   Any foreign language with course numbers 121, 122, 201, or 202 (4)
LIMITED CHOICE ELECTIVES
FOR ASSOCIATE IN ARTS DEGREE

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

1. Courses numbered 120 to 294 with any of the course codes listed below:
   - ANAT
   - CPSC
   - GEOG
   - HUMS
   - MATH
   - PHIL
   - RELG
   - STAT
   - ANTH
   - ECON
   - GEOI
   - ISCI
   - METR
   - PHYS
   - SOCI
   - WRIT
   - ASTR
   - EDUC
   - GRMN
   - JAPN
   - MICR
   - POLS
   - SOWK
   - BIOD
   - ENGL
   - HIST
   - JRNW
   - PFKN
   - PSYC
   - SPAN
   - CHEM
   - FREN
   - HONH
   - LING
   - PHGY
   - HEAL
   - SPCH

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, 151, 162, 171, 175, 203, 201, 203, 204, 206, 208, 253
   - RUSN
   - 118, 201, 250
   - CMIV
   - 101, 111, 120, 121, 188, 189, 220, 221
   - CISB
   - 160, 120, 122, 170, 175, 180, 200, 260, 280, 281
   - CJSU
   - 101, 102, 103, 106, 130, 131, 133, 134, 135, 151, 203, 264, 250, 255
   - DANC
   - 100, 101, 102, 103, 104, 111, 112, 113, 114, 125, 132, 134, 155, 191, 201, 202, 203, 204, 211, 212
   - EMSA
   - 100
   - GRMN
   - 115, 116
   - HUSE
   - 240, 241, 242, 244
   - IMAG
   - 101
   - LEGL
   - 215, 216
   - MATH
   - 112
   - MGMOT
   - 225
   - MKTG
   - 140, 200, 220, 221
   - MUSC
   - SIGN
   - 161, 162, 163, 164
   - SOUK
   - 101
   - THEA
   - 110, 120, 181, 210, 234, 285, 295, 296

3. A maximum of two credit hours from courses with any of the course codes listed below:
   - PFAQ
   - PFDA
   - PFHC
   - PRIS
   - PPFR
   - PFCW
   - PPFT
   - PFHW
   - PFDI
   - PFTS

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ASSOCIATE IN SCIENCE DEGREE

EFFECTIVE FALL 2000 – SUMMER 2005

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/Physics
Medical Pre-Professional
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 Course Schedule for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

NOTE: Students should be aware that general education and subject area requirements vary from one college or university to another. Prior to beginning this curriculum, students should see an academic advisor or counselor in the Counseling and Advising Center (Room 2350, Sammon (GVT) Building, telephone number (517) 483-1904), obtain an appropriate transfer guide (also in the Counseling and Advising Center), and/or contact the school to which they will transfer for specific transfer institution requirements. (See Transfer Information in this section of the Catalog for a list of institutions for which transfer guides are available).

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

I. GENERAL EDUCATION REQUIREMENTS

Minimum of 35 credits

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

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

Students who complete Core courses other than those indicated below, and who wish to apply these credits toward the Associate in Arts Degree, should contact a faculty advisor or counselor in Room 2300 of the GVT Building, telephone number (516) 483-1904.

Before selecting general education courses, students should consult the 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 have an asterisk (*) preceding them.)

1. English Composition
   8 credits

   Completing any one of the courses listed in this section satisfies the LCC General Education Core Requirement in writing.
   • Complete one course from the following: "WRIT 121" (4), "WRIT 131 (4), AND
   • Complete one course from the following: "WRIT 122 (4), "ENGL 122 (4),
   "WRIT 132 (4), "ENGL 132 (4). OR
   IF WRIT 121 is waived, complete ENGL 122 or WRIT 122, AND a second
   WRIT or ENGL course with a number of 200 or higher.

2. Science and Mathematics
   Minimum of 8 credits

   Completing at least one asterisked (*) course from A or B will satisfy the
   LCC General Education Core Requirement in science and technology.
   Completing any asterisked (*) course from C will satisfy the LCC General
   Education Core Requirement in mathematics. If C is not chosen, then the
   LCC Core requirement for mathematics must be met by one of the
   options described on page 23 of this catalog.
   A minimum of 8 credits must be chosen from two of the three categories
   below (A, B, and C).
   A. Physical Science: "CHEM 151 & 151 (5), "GEOL 221 (4), "GEOL 222 (4),
      "METR 220 (4), "PHYS 201 & 225 (5), "PHYS 213 & 225 (6)
   B. Biological Science: "ANAT 201 (4), "BIOL 120 (4), "BIOL 121 (4),
      "BIOL 127 (4), "BIOL 128 (4), "BIOL 129 (4), "BIOL 210 (4),
      "BIOL 216 (4), "BIOL 256 (4), "BIOL 259 (4),
      "MICRO 203 & 204 (4), "PHYS 202 (4)
   C. Mathematics: "MATH 121 (4), "MATH 122 (3), "MATH 126 (5),
      "MATH 128 (3), "MATH 130 (3), "MATH 141 (3), "MATH 151 (4),
      "MATH 152 (4), "MATH 201 (3), "STAT 170 (3), "STAT 215 (4)

3. Social Science
   Minimum of 8 credits

   Completing at least one asterisked (*) course from Category 3 (Social Science) OR Category 4 (Humanities) will satisfy the institutional Core requirement in Global Perspectives and Diversity.
   • Complete one course in Political Science from the following:
      "POLS 120 (4) OR POLS 121 (4)
   • Complete one course or course pair from the following:
     "ANTH 270 (3), "ECON 120 (4), "ECON 201 (3), "ECON 202 (3), "GEOG 120 (3),
     "GEOG 201 (4), "POLS 260 (3), "PSYC 100 (4), "PSYC 202 (3),
     "PSYC 203 (3), "PSYC 205 (3), "SOC 120 (4), "SOL 255 (3)

4. Humanities
   8 credits

   Completing at least one one-credit course from Category 3 (Social Science) OR Category 4 (Humanities) will satisfy the institutional Core requirement in Global Perspectives and Diversity.
   • Complete one of the following combinations:
      "HIST 211 and HIST 212 or 214, "HUMS 213 and 214, "ENGL 211 and 212, "PHIL 211 and 212, "RELG 211 and 212, "REL 212, "REL 213 and 214, "REL 215
   • Complete eight (8) credits from the list below in two different areas. (Note that MSU does not accept Foreign Language as meeting the MACRAO/Integrative Studies Humanities requirement.)
     - Art History: "HUMS 120, "211, "212
     - Foreign Language: "FREN 201, 202, "GERM 201, 202, "SPAN 201, 202
     - History: "HIST 150, 210, 211, 212, 214, 220, 230, 240, 250, 260
     - Humanities: "HUMS 160, "213, "214, "215
     - Literature: "ENGL 201, 202, "203, "211, "212, 255, 256, 260, 266, 267, "270, 290
     - Performing Arts: "MUSC 193, 194, 241, "THEA 210
     - Philosophy: "PHIL 151, 152, "153, "111, "211, "212, "260
     - Religion: "RELG 211, "212, 241, 242, 259

5. Speech
   3 credits

   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.
ASSOCIATE IN SCIENCE DEGREE

2000-2001 Catalog Lansing Community College

BIOLOGY

Curriculum Code: 0221

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

2. Complete the following required courses (12 credits):
   - BIOL 127 Cell Biology (4)
   - BIOL 128 Organismal Biology (4)
   - CHEM 152 General Chemistry Lecture II (4)
   - CHEM 162 General Chemistry Lab II (1)

3. Complete a minimum of 15 credits from the following:
   - ANAT 231 Human Anatomy (4)
   - BIOL 210 Natural Resource Conservation (4)
   - BIOL 260 Botany (4)
   - BIOL 265 Zoology (4)
   - BIOL 270 Human Genetics (3)
   - BIOL 275 Molecular Biology I (4)
   - CHEM 251 Organic Chemistry Lecture I (4)
   - CHEM 252 Organic Chemistry Lecture II (4)
   - CHEM 272 Organic Chemistry Laboratory (2)
   - MIRC 203 Microbiology (3)
   - MIRC 204 Microbiology Laboratory (1)
   - PHYG 202 Human Physiology (4)
   - STAT 176 Introduction to Statistics (3)

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

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<td>MATH 121</td>
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CHEMISTRY

Curriculum Code: 0117

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

2. Complete the following required courses (20 credits):
   (Note: In order to complete sequences, MATH 223, PHYS 216, and PHYS 226 are also recommended.)
   - CHEM 152 General Chemistry Lecture II (3)
   - CHEM 152 General Chemistry Lab II (1)
   - CHEM 251 Organic Chemistry Lecture I (4)
   - CHEM 252 Organic Chemistry Lecture II (4)
   - CHEM 262 Quantitative Analysis (2)
   - CHEM 272 Organic Chemistry Laboratory (2)
   - MATH 152 Calculus II (4)

3. Complete a minimum of 6 credits from the following:
   - BIOL 127 Cell Biology (4)
   - PHYS 215 Physics I: Mechanics (5)
   - PHYS 225 Physics II Lab (1)
   - STAT 215 Intro to Probability and Stats (4)

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

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<th>I</th>
<th>II</th>
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<td>CHEM 161</td>
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<tr>
<td>MATH 151</td>
<td>MATH 152</td>
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COMPUTER SCIENCE

Curriculum Code: 0169

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

2. Complete the following required courses (20 credits):
   - CPSC 220 Algorithms and Computing w/ C++ (4)
   - CPSC 231 Computing and Data Structures (4)
   - CPSC 260 Computer Science Structures (4)
   - MATH 152 Calculus II (4)
   - MATH 253 Calculus III (4)

3. Complete a minimum of 6 credits from the following:
   (NOTE: In order to complete sequences, PHYS 218 is also recommended.)
   - MATH 254 Intro to Differential Equations (3)
   - MATH 260 Linear Algebra (3)
   - PHYS 216 Physics II: Electrom/Waves/Optic (5)
   - PHYS 226 Phys II Laboratory (1)
   - STAT 215 Intro to Probability and Stats (4)

ENVIRONMENTAL SCIENCE

Curriculum Code: 0755

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

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

3. Complete the following required courses (22 credits):
   - BIOL 128 Organismal Biology (4)
   - BIOL 210 Natural Resource Conservation (4)
   - CHEM 192 Introductory Organic Chemistry (3)
   - CHEM 192 Intro Organic Chemistry Lab I (1)
   - CPSC 120 Introduction to Computers (3)
   - GEOL 230 Environmental Geology (4)
   - STAT 170 Introduction to Statistics (3)

4. Complete a minimum of 4 credits from the following:
   - BIOL 260 Botany (4)
   - BIOL 265 Zoology (4)
   - GEOG 121 Physical Geography (3)
   - GFET 203 Beginning Micro Station (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.

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<th>I</th>
<th>II</th>
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<tr>
<td>MATH 121</td>
<td>STAT 170</td>
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</table>

GEOSCIENCE

Curriculum Code: 0174

1. Complete MATH 122, CHEM 151, and CHEM 161 to satisfy the Science and Mathematics General Education Requirement.

2. Complete the following required courses (16 credits):
   - CHEM 152 General Chemistry Lecture II (3)
   - CHEM 152 General Chemistry Lab II (1)
   - GEOG 221 Physical Geology (4)
   - GEOG 222 Historical Geology (4)
   - GEOG 230 Environmental Geology (4)
3. Complete a minimum of 10 credits from the following:
(NOTE: PHYS 215 and 216 may be substituted for PHYS 201 and 202 with the appropriate math background.)
GPSC 120 Introduction to Computers (3)
GEOL 210 Geology Field Studies (1)
METR 220 Introduction to Meteorology (4)
PHYS 201 Introductory Physics I (4)
PHYS 202 Introductory Physics II (4)
PHYS 225 Physics I Laboratory (1)
PHYS 226 Physics II Laboratory (1)

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

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<th>II</th>
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<td>GEOL 230</td>
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<td>GEOL 221</td>
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<td>MATH 122</td>
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</tbody>
</table>

MATHEMATICS/PHYSICS  
Curriculum Code: 0200

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

2. Complete the following required courses (20 credits):
   - MATH 152 Calculus II (4)
   - MATH 223 Calculus III (4)
   - MATH 254 Intro: Differential Equations (3)
   - MATH 260 Linear Algebra (3)
   - PHYS 216 Phys II: Electrom/Waves/Optic (5)
   - PHYS 226 Physics II Laboratory (1)

3. Complete a minimum of 5 credits from the following:
   - CHEM 151 General Chemistry Lecture I (4)
   - CHEM 161 General Chemistry Lab I (1)
   - CPSC 230 Algorithms and Computing w/ C++ (4)
   - CPSC 231 Computing and Data Structures (4)
   - CPSC 260 Computer Science Structures (3)
   - MATH 281 Honors Math Seminar I (1)
   - STAT 215 Intro to Probability and Stats (4)

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

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<th>I</th>
<th>II</th>
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<tr>
<td>PHYS 215</td>
<td>PHYS 216</td>
<td>PHYS 256</td>
<td>PHYS 258</td>
</tr>
</tbody>
</table>

PRE-ENGINEERING  
Curriculum Code: 0112

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

2. Complete the following required courses (21 credits):
   - MATH 152 Calculus II (4)
   - MATH 223 Calculus III (4)
   - MATH 254 Intro: Differential Equations (3)
   - PHYS 215 Phys I: Mechanics (5)
   - PHYS 216 Phys II: Electrom/Waves/Optic (5)

3. Complete a minimum of 5 credits from the following:
   - PHYS 225 Physics I Laboratory (1)
   - PHYS 226 Physics II Laboratory (1)
   - CHEM 152 General Chemistry Lecture II (3)
   - CHEM 182 General Chemistry Lab II (1)
   - CPSC 230 Algorithms and Computing w/ C++ (4)
   - CPSC 231 Computing and Data Structures (4)
   - MATH 280 Linear Algebra (3)
   - STAT 215 Intro to Probability and Stats (4)

4. It is recommended that a student take one of the following CAD courses. These courses may not transfer to all engineering programs.
   - DTDS 131 AutoCAD Basic 2D (4)
   - DTDS 140 UNIGRAPHICS I (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.

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<tr>
<td>CHEM 161</td>
<td>PHYS 215</td>
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GENERAL ASSOCIATE DEGREE
Curriculum Code: 0863
EFFECTIVE FALL 2000 – SUMMER 2005

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

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

GENERAL EDUCATION
General education is an important part of this program and includes a mathematics competency requirement. To fulfill the mathematics competency requirement, some students may find it necessary to complete specific course work in mathematics. For information on how to fulfill all general education requirements, see page 23.

INFORMATION
The requirements for this program of study are outlined below. Prior to beginning this program, students should meet with an academic advisor or counselor in the Counseling and Advising Center (Room 2000 of the GVT Building, telephone number (517) 483-1904, or (517) 483-1191), or in the Counseling Services Department (Room 208 of the Student Personnel Services Building, telephone number (517) 483-1184).

REQUIREMENTS

<table>
<thead>
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<td>(See the GENERAL EDUCATION section above)</td>
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<tr>
<td>Speech Communication Core Area</td>
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<tr>
<td>Science/Technology Core Area</td>
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<td>Global Perspectives and Diversity Core Area</td>
<td>3</td>
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<tr>
<td>Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)</td>
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</table>

Customized Options (Choose one option—See Note 1) 48 Credits

Option A
- Credits in a Selected Area of Study 12
- Elective Credits 36

Option B
- Transfer Guide Requirements (See Note 2) Variable
- Elective Credits (See Note 3) Variable

MINIMUM TOTAL 60

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

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APPLIED DEGREES AND CERTIFICATES

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

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KEY
AB .......................... Associate Degree Business
AAA .......................... Associate Degree Applied Arts
AAP .......................... Associate Degree Applied Science
AC .......................... Certificate of Achievement
CC .......................... Certificate of Completion
ACCOUNTING

ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 0162 (Effective Fall 2000–Summer 2005)

Graduates of this program are qualified to work as paraprofessionals 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 type of work. Job titles include full-service bookkeeper, tax preparer, and internal auditor, among others. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES

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

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. To fulfill the mathematics competency requirement, students may need to complete specific coursework in mathematics. For information on how to fulfill all general education requirements, see page 23.

INFORMATION

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

REQUIREMENTS

TOTAL: 31 CREDITS

<table>
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<tr>
<th>COURSE</th>
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<tbody>
<tr>
<td>ACGG 210</td>
<td>Principles of Accounting I</td>
</tr>
<tr>
<td>ACGG 211</td>
<td>Principles of Accounting II</td>
</tr>
<tr>
<td>ACGG 220</td>
<td>Intermediate Accounting I</td>
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<tr>
<td>ACGG 221</td>
<td>Intermediate Accounting II</td>
</tr>
<tr>
<td>ACGG 250</td>
<td>Cost Accounting</td>
</tr>
<tr>
<td>ACGG 260</td>
<td>Accounting Systems</td>
</tr>
<tr>
<td>ACH 215</td>
<td>Busn Law I, Basic Principles</td>
</tr>
</tbody>
</table>

LIMITED CHOICE REQUIREMENTS

TOTAL: 29–30 CREDITS

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

CHOICE 1: General Education Core Areas

(See the GENERAL EDUCATION section above)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>Writing Core Area</td>
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<tr>
<td>Speech Communication Core Area</td>
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</tr>
<tr>
<td>Science/Technology Core Area</td>
<td></td>
</tr>
<tr>
<td>Global Perspectives and Diversity Core Area</td>
<td></td>
</tr>
<tr>
<td>Mathematics Competency (See page 23 for information on how to fulfill this requirement: Course work may be needed.)</td>
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12 Credits

CHOICE 2: Accounting Specialty Area

11–12 Credits

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>ACGG 160</td>
<td>Payroll Systems and Taxes</td>
</tr>
<tr>
<td>ACGG 231</td>
<td>Managerial Accounting</td>
</tr>
<tr>
<td>ACGG 232</td>
<td>Budgeting</td>
</tr>
<tr>
<td>ACGG 251</td>
<td>Federal Income Tax I</td>
</tr>
<tr>
<td>ACGG 252</td>
<td>Federal Income Tax II</td>
</tr>
<tr>
<td>ACGG 260</td>
<td>Governmental Accounting</td>
</tr>
<tr>
<td>ACH 260</td>
<td>Auditing</td>
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</tbody>
</table>

CHOICE 3: Other Accounting & Business Related

(See Note 1) 6 Credits

<table>
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<tr>
<th>Course</th>
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<tbody>
<tr>
<td>ACGG 245</td>
<td>Accounting Internship</td>
</tr>
<tr>
<td>ACGG 271</td>
<td>Principles of Finance</td>
</tr>
<tr>
<td>INSU 265</td>
<td>Principles Risk and Insurance</td>
</tr>
<tr>
<td>ACH 219</td>
<td>Adv Busn Law for Acct Majors</td>
</tr>
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</table>

MINIMUM TOTAL 60

NOTES

1. Students may also select from unchosen 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

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>ACGG 210</td>
<td>ACGG 211</td>
<td>ACGG 220</td>
<td>ACGG 221</td>
</tr>
<tr>
<td>ACGG 215</td>
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<td>ACGG 231</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>

ACCOUNTING

CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 0714 (Effective Fall 2000–Summer 2005)

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

REQUIREMENTS

TOTAL: 17 CREDITS

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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<tbody>
<tr>
<td>ACGG 180</td>
<td>Payroll Systems and Taxes</td>
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<tr>
<td>ACGG 210</td>
<td>Principles of Accounting I</td>
</tr>
<tr>
<td>ACGG 211</td>
<td>Principles of Accounting II</td>
</tr>
<tr>
<td>ACGG 260</td>
<td>Accounting Systems</td>
</tr>
<tr>
<td>OADM 215</td>
<td>Records and Info Management I</td>
</tr>
</tbody>
</table>

LIMITED CHOICE REQUIREMENTS

TOTAL: 11–15 CREDITS

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

CHOICE 1: Accounting Specialty

2–3 Credits

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGG 140</td>
<td>Income Tax Preparation</td>
</tr>
<tr>
<td>ACGG 235</td>
<td>Budgeting</td>
</tr>
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</table>

CHOICE 2: Word Processing

4 Credits

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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<tbody>
<tr>
<td>CABS 113</td>
<td>Microsoft Word Office/ Int Key</td>
</tr>
<tr>
<td>CABS 119</td>
<td>Word for Windows</td>
</tr>
<tr>
<td>CABS 121</td>
<td>WordPerfect for Windows</td>
</tr>
<tr>
<td>CABS 189</td>
<td>Advanced Microsoft Word</td>
</tr>
</tbody>
</table>

CHOICE 3: Office Skills

2–4 Credits

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>OADM 195</td>
<td>Human Behavior in Work Place</td>
</tr>
<tr>
<td>OADM 203</td>
<td>Professional Office Procedures</td>
</tr>
<tr>
<td>OADM 220</td>
<td>Administrative Office Mgmt</td>
</tr>
</tbody>
</table>

CHOICE 4: Written Communication

3–4 Credits

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>WRIT 121</td>
<td>Composition I</td>
</tr>
<tr>
<td>WRIT 127</td>
<td>Business Writing</td>
</tr>
</tbody>
</table>

ELECTIVES

TOTAL: 2 CREDITS

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 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>ACGG 210</td>
<td>ACGG 211</td>
</tr>
<tr>
<td>OADM 215</td>
<td>ACGG 220</td>
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</tr>
<tr>
<td>Lim.Ch</td>
<td>Lim.Ch</td>
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</tbody>
</table>
| Lim.Ch | Elec.
ACCOUNTING, CPA EXAM PREP
ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 0235 (Effective Fall 2000–Summer 2005)

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 is that of the external auditor, which involves expressing an independent opinion on financial statements prepared by others. Some public accounting experience is required prior to certification in some states. The student is advised to review the requirements for certification as defined by the State Board of Accountancy. In addition, students should contact the Board of Accountancy, State of Michigan, Consumer and Industry Services to receive an authoritative list of requirements to sit for the C.P.A. exam.

PREREQUISITES

Students should see the Course Descriptions section of this catalog or the Course Schedule for course prerequisite information. Basic skills assessment and advising information may be found on page 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, students may need to complete specific course work in mathematics. For information on how to fulfill all general education requirements, see page 49.

INFORMATION

Contact the Business Careers Department, Old Central Building, Room 216, telephone number (517) 483-1022.

REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
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<th>CREDIT HOURS</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 230</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 241</td>
<td>Federal Income Tax II</td>
<td>4</td>
</tr>
<tr>
<td>ACGG 260</td>
<td>Accounting Systems</td>
<td>4</td>
</tr>
<tr>
<td>ACGG 290</td>
<td>Auditing</td>
<td>3</td>
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<td>LEOI 215</td>
<td>Bus Law I, Basic Principles</td>
<td>3</td>
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<tr>
<td>LEOI 219</td>
<td>Adv Bus Law for Acc Majors</td>
<td>4</td>
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</table>

LIMITED CHOICE REQUIREMENTS

<table>
<thead>
<tr>
<th>TOTAL: 19–20 CREDITS</th>
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</table>

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

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

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

CHOICE 2: Governmental/Fund Accounting 4 Credits

- ACGG 350 Advanced Accounting 4
- ACGG 280 Governmental Accounting 4

CHOICE 3: Accounting Related 2–4 Credits

- ACGG 231 Managerial Accounting 4
- ACGG 255 CPA Review - Tax, Mgr. Cost, Gov 1
- ACGG 256 CPA Review - Business Law 1
- ACGG 257 CPA Review - Auditing 1
- ACGG 298 CPA Review - Fin Acc/Report 1
- ECON 201 Principles of Economics - Micro 3

MINIMUM TOTAL 60

NOTE

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

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

Curriculum Code: 0247 (Effective Fall 2000–Summer 2005)

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

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

GENERAL EDUCATION
General education is an important part of this program and includes a mathematics competency requirement. To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics. For information on how to fulfill all general education requirements, see page 23.

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

REQUIREMENTS

<table>
<thead>
<tr>
<th>COURSE</th>
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<tr>
<td>ACGG 210</td>
<td>Principles of Accounting I</td>
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</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 230</td>
<td>Cost Accounting</td>
<td>4</td>
</tr>
<tr>
<td>ACGG 231</td>
<td>Managerial Accounting</td>
<td>4</td>
</tr>
<tr>
<td>ACGG 250</td>
<td>Accounting Systems</td>
<td>4</td>
</tr>
<tr>
<td>QUAL 100</td>
<td>Intro Quality Assurance</td>
<td>4</td>
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<tr>
<td>QUAL 103</td>
<td>Probability/Stat Qual Assur</td>
<td>4</td>
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<tr>
<td>QUAL 205</td>
<td>Cost of Quality</td>
<td>3</td>
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TOTAL: 35 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
  Mathematics Competency  (See page 23 for information on how to fulfill this requirement. Course work may be needed.)

CHOICE 2: Accounting Related 9 Credits
  ACGG 160 Payroll Systems and Taxes  2
  ACGG 235 Budgeting               2
  ACGG 240 Federal Income Tax I    4
  ACGG 241 Federal Income Tax II   4
  ACGG 280 Governmental Accounting 4
  ACGG 290 Auditing                3

CHOICE 3: Quality Related (Choose one subchoice) 6–7 Credits
  Subchoice 3A
  QUAL 104 Process Control Charting  3
  QUAL 107 Problem-Solving Techniques 3
  Qualitative Research  3
  QUAL 203 Quality Systems Management 4

MINIMUM TOTAL 52

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

STUDENTS ARE RESPONSIBLE FOR COMPLETING ALL REQUIREMENTS AS STATED. THE ONLY OFFICIAL DOCUMENTATION OF PROGRAM COMPLETION STATUS IS AN AUDIT CONDUCTED BY THE REGISTRATION OFFICE THAT IS INITIATED WHEN STUDENTS APPLY FOR A DEGREE OR CERTIFICATE. STUDENTS ARE EXPECTED TO APPLY ONE SEMESTER PRIOR TO THE SEMESTER THEY INTEND TO GRADUATE.
PREREQUISITES
Students should see the Course Descriptions section of this catalog or the Course Schedule for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION
General education is an important part of this program and includes a mathematics competency requirement. To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics. For information on how to fulfill all general education requirements, see page 23.

INFORMATION
Contact the Technology Careers Department, Gannon Vocational-Technical Center, Room 106, telephone number (517) 463-1338.

REQUIREMENTS

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<tr>
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<td>Global Positioning Systems</td>
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<td>ORACLE/Geographic Info Sys</td>
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<td>Beginning ARC/Info</td>
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<td>GRET 256</td>
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<td>Computer Draft/Dsgn Land Arch</td>
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<td>WRIT 124</td>
<td>Technical Writing</td>
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LIMITED CHOICE REQUIREMENTS

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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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SUGGESTED COURSE SEQUENCE

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</table>

Students are responsible for completing all requirements as stated. The only official documentation of program completion status is an audit conducted by the Registrar's Office that is initiated when students apply for a degree or certificate. Students are expected to apply one semester prior to the semester they intend to graduate.
ARCH TECH, COMPUTER GRAPHICS
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 0226 (Effective Fall 2000-Summer 2005)

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

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics. For information on how to fulfill all general education requirements, see page 23.

INFORMATION

Contact the Architectural Studies Center, Gannon Vocational-Technical Center, Room 450, telephone number (517) 485-1377.

REQUIREMENTS

<table>
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<th>CODE</th>
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<td>MATH 121</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) 12 Credits

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

CHOICE 2: Computer Graphics 18 Credits

ARCH 221 | Architectural DataCAD I     | 4                 |
ARCH 222 | Architectural DataCAD II    | 4                 |
ARCH 225 | Arch DataCAD Independent Study | 1-4               |
ARCH 231 | Architectural AutoCAD I     | 4                 |
ARCH 232 | Architectural AutoCAD II    | 4                 |
ARCH 235 | Arch AutoCAD Independent Study | 1-4               |
ARCH 237 | Arch Computer Rendering     | 3                 |
ARCH 251 | Architectural MicroStation I | 4                 |
ARCH 252 | Architectural MicroStation II | 4                |
ARCH 255 | MicroStation Independent Study | 1-4              |

CHOICE 3: History and Preservation 3 Credits

ARCH 141 | Architectural History I     | 3                 |
ARCH 142 | Architectural History II    | 3                 |
ARCH 148 | Preserv/Adaptive Reuse Archi| 3                 |

CHOICE 4: Materials, Structures and Systems 7-8 Credits

ARCH 273 | Environmental Systems       | 4                 |
ARCH 276 | Alternative Structures      | 3                 |
ARCH 279 | Energy Efficient Design     | 4                 |
BLDT 277 | Construction Cost Estimating | 4                 |

CHOICE 5: Architectural Related (See Note 2) 4 Credits

MINIMUM TOTAL 70

NOTES

1. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.
2. Allows completion of courses which relate to specific career preparation for the field of 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, 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>ARCH 101</td>
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<td>ARCH 121</td>
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STUDENTS ARE RESponsible FOR COMPLETING ALL REQUIREMENTS AS STATED. THE ONLY OFFICIAL DOCUMENTATION OF PROGRAM COMPLETION STATUS IS AN AUDIT CONDUCTED BY THE REGISTRAR’S OFFICE THAT IS INITIATED WHEN STUDENTS APPLY FOR A DEGREE OR CERTIFICATE. STUDENTS ARE EXPECTED TO APPLY ONE SEMESTER PRIOR TO THE SEMESTER THEY INTEND TO GRADUATE.
### ARCH TECH, RESIDENTIAL DESIGN
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 0758 (Effective Fall 2000 - Summer 2005)

This degree option will provide architectural students with the opportunity to study/ 
all aspects of single and multi-family residential design and construction. Areas 
of required study include residential design theory, preparation of residential 
working drawings, construction techniques, construction materials, residential 
landscaping, residential interiors, computer graphics, presentation techniques, 
structural design, and architectural history. Students will have the opportunity to 
take a cross-disciplinary array of technology courses, preparing for work in all 
segments of the residential design/build markets. Not all courses in this pro-
gram transfer to all colleges. Students planning to transfer should see an ac-
demic advisor or counselor before enrolling in any course.

#### PREREQUISITES
Students should see the Course Descriptions section of this catalog or the Course 
Schedule for course prerequisite information. Basic skills assessment and 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 require-
ment, students may need to complete specific course work in mathematics. 
For information on how to fulfill all general education requirements, see page 23.

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

#### REQUIREMENTS

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<td>ARCH 271</td>
<td>Structural Theory</td>
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<td>BLDT 231</td>
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</tr>
<tr>
<td>LAND 132</td>
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<tr>
<td>MATH 121</td>
<td>College Algebra I</td>
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</table>

#### LIMITED CHOICE REQUIREMENTS

| 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)

- 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
- Mathematics Competency (See Note 1): 3 Credits

#### CHOICE 2: Computer Graphics

| ARCH 221 | Architectural DataCAD I | 3-6 | |
| ARCH 222 | Architectural DataCAD II | 4 | |
| ARCH 225 | Arch DataCAD Independent Study | 1-4 | |
| ARCH 231 | Architectural AutoCAD I | 4 | |
| ARCH 232 | Architectural AutoCAD II | 4 | |
| ARCH 235 | Arch AutoCAD Independent Study | 1-4 | |
| ARCH 237 | Arch Computer Rendering | 3 | |

#### CHOICE 3: Building Trades

| BLDT 100 | Introduction to Construction | 3 | |
| BLDT 121 | Residential Framing | 4 | |
| BLDT 277 | Construction Cost Estimating | 4 | |

#### CHOICE 4: Materials Structures and Systems

| ARCH 273 | Environmental Systems | 4 | |
| ARCH 276 | Alternative Structures | 3 | |
| ARCH 278 | Energy Efficient Design | 4 | |
| ARCH 283 | Materials of Construction | 4 | |

#### CHOICE 5: History

| ARCH 142 | Architectural History II | 3 | |
| ARCH 146 | Pre-Columbian Architecture | 3 | |
| INTR 232 | Twentieth-Century Interiors | 3 | |

#### CHOICE 6: Interior Design

| INTR 151 | Computer-Aided Kitchen Design | 4 | |
| INTR 190 | Interior/Materials/Equipment | 4 | |
| INTR 240 | Fundamentals of Lighting | 3 | |
| INTR 246 | Residential Interior Studio | 3 | |

#### CHOICE 7: Architectural Related (See Note 2)

| 2-4 Credits | |

#### MINIMUM TOTAL

| 70 | |

#### NOTES

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

2. Allows completion of courses which relate to specific career preparation for the 
field of residential design and have not been applied in any of the above 
categories.

#### SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to 
offer courses. Students who for any reason are unable to follow the course 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 
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ARCHITECTURAL TECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 6233 (Effective Fall 2000-Summer 2005)

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 professional architects, as well as interior designers, residential designers, and builders. Students in the option area are also prepared to pursue a higher degree in architecture. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES

Students should see the Course Descriptions section of this catalog or the Course Schedule for course 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, students must complete specific course work in mathematics. For information on how to fulfill all general education requirements, see page 23.

INFORMATION

Contact the Architectural Studies Center, Gannon Vocational-Technical Center, Room 450, telephone number (517) 483-1287.

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<td>ARCH 232: Architectural Drafting IV</td>
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<td>ARCH 211: Design Studio I</td>
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<td>ARCH 271: Structural Theory</td>
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<tr>
<td>BLDT 281: International Code</td>
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<tr>
<td>MATH 121: College Algebra I</td>
</tr>
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</table>

LIMITED CHOICE REQUIREMENTS

TOTAL: 37-41 CREDITS

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

CHOICE 1:

(See the GENERAL EDUCATION section above)

- 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
  - Mathematics Competency (See Note 1)

CHOICE 2:

(See Note 2)

- Computer Graphics: 7-8 Credits
  - ARCH 221: Architectural DataCAD I | 4 |
  - ARCH 222: Architectural DataCAD II | 4 |
  - ARCH 231: Architectural AutoCAD I | 4 |
  - ARCH 232: Architectural AutoCAD II | 4 |
  - ARCH 237: Arch Computer Rendering | 3 |
  - ARCH 251: Architectural MicroStation I | 4 |
  - ARCH 252: Architectural MicroStation II | 4 |

CHOICE 3:

(See Note 2)

- Materials, Structures and Systems: 7-8 Credits
  - ARCH 273: Environmental Systems | 4 |
  - ARCH 276: Alternative Structures | 3 |
  - ARCH 278: Energy Efficient Design | 4 |
  - ARCH 283: Materials of Construction | 4 |
  - BLDT 277: Construction Cost Estimating | 4 |

CHOICE 4:

History and Preservation: 6 Credits
- ARCH 141: Architectural History I | 3 |
- ARCH 142: Architectural History II | 3 |
- ARCH 146: Preserv/Adapv House Architect | 3 |

CHOICE 5:

Design: 2-3 Credits
- ARCH 128: Residential Planning | 2 |
- ARCH 181: Barrier-Free Design | 3 |
- ARCH 192: Universal Design | 3 |
- ARCH 212: Design Studio II | 3 |
- ARCH 213: Facilities Design | 3 |

CHOICE 6:

Architectural Related (See Note 2): 3-4 Credits

MINIMUM TOTAL: 70

NOTES

1. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.
2. Allows completion of courses which relate to specific career preparation for the field of architecture and have not been applied in any of the above categories.

SUGGESTED COURSE SEQUENCE

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

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**AIRBRUSH ILLUSTRATION CERTIFICATE OF ACHIEVEMENT**

Curriculum Code: 0850 [Effective Fall 2000–Summer 2005]

This certificate program consists of practical hands-on courses that provide students with the technical knowledge and skills needed to create airbrush artwork on a variety of surfaces and materials. Students are prepared for entry-level positions in fields such as automotive customization, sign painting, photo retouching, nail design, and the fashion 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.

**INFORMATION**

Contact the Art, Design and Multimedia Program, Academic and Office Facility, Room 314, telephone number (517) 483-1476.

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<td>ARTS 131</td>
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<td>ARTS 132</td>
<td>Life Drawing</td>
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<td>ARTS 133</td>
<td>Perspective Drawing</td>
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<td>ARTS 195</td>
<td>Engage/Bus. Issues for Artists</td>
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<td>ARTS 221</td>
<td>Airbrush Techniques I</td>
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<td>ARTS 222</td>
<td>Airbrush Techniques II</td>
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<tr>
<td>ARTS 224</td>
<td>Automotive Airbrush Techniques</td>
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**LIMITED CHOICE REQUIREMENTS**

Total: 0–10 CREDITS

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

**CHOICE 1:**

- ARTS 162 Typography
- ARTS 200 Painting I
- ARTS 213 Illustration Fundamentals
- ARTS 216 Humorous Illustration I

**MINIMUM TOTAL**

33

**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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Students are responsible for completing all requirements as stated. The only official documentation of program completion status is an audit conducted by the Registrar's Office that is initiated when students apply for a degree or certificate. Students are expected to apply one semester prior to the semester they intend to graduate.
### COMPUTER GRAPHICS ANIMATION
ASSOCIATE IN APPLIED ARTS DEGREE

Curriculum Code: 0284 (Effective Fall 2000-Summer 2005)

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 consult with an academic advisor or counselor before enrolling in any course.

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

### GENERAL EDUCATION
General education is an important part of this program and includes a mathematicstes competency requirement. To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics. For information on how to fulfill all general education requirements, see page 23.

### INFORMATION
Contact the Art, Design and Multimedia Program, Academic and Office Facility, Room 314, telephone number (517) 483-1476.

#### REQUIREMENTS

<table>
<thead>
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<th>REQUIREMENTS</th>
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<td>ARTS 131</td>
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<tr>
<td>ARTS 132</td>
<td>Life Drawing</td>
</tr>
<tr>
<td>ARTS 137</td>
<td>Perspective Drawing</td>
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<td>Computer Graphics/Illustration</td>
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<td>ARTS 152</td>
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<td>Electronic Design</td>
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<td>Humorous Illustration I</td>
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<td>Comp Graphics/Advanced Ilustr</td>
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<td>ARTS 235</td>
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<td>ARTS 236</td>
<td>Computer Graphics/Production</td>
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<td>ARTS 269</td>
<td>The Portfolio (See Note 1)</td>
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<td>ARTS 281</td>
<td>Art Internship</td>
</tr>
<tr>
<td>FILM 118</td>
<td>Film Production 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

12 Credits

(See the GENERAL EDUCATION section above)

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

MINIMUM TOTAL 72

### NOTES

1. The Portfolio is considered to be the final course in this curriculum. All other courses must already be completed or be taken concurrently with ARTS 269.
2. It is recommended that all students entering this curriculum have computer experience in both Windows NT and Macintosh Operating Systems. This experience may come from life or work experience, or other studies, as well as CARS' 100 Seminars—Introduction to Windows NT and Introduction to the Macintosh. Students should consult with an advisor in the Art, Design and Multimedia Program if they are not sure about their computer skill level.
3. For graduation, a student must have earned a minimum grade point of 2.0 in all courses with an ARTS and FILM 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.

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#### ARTS 233

#### ARTS 236

#### ARTS 269

#### ARTS 291
COMPUTER GRAPHICS, MULTIMEDIA ASSOCIATE IN APPLIED ARTS DEGREE

Curriculum Code: 0194 (Effective Fall 2000-Summer 2005)

A multimedia designer is a computer artist who uses many electronic tools to create interactive art. Multimedia designers must have creative abilities and design, drawing, problem-solving, production, communication, and presentation skills. Multimedia is a cooperative process. The multimedia designer should expect to work as part of a team which may include animators, graphic designers, photographers, audio and video producers, writers and others. Employment can be with advertising agencies, on-line magazines and newspapers, in-house training in the public and private sector, and the education/entertainment industry.

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

GENERAL EDUCATION
General education is an important part of this program and includes a mathematics competency requirement. To fulfill the mathematics competency requirement, students may either complete specific course work in mathematics, or information on how to fulfill all general education requirements, see page 23.

INFORMATION
Contact the Art, Design and Multimedia Program, Academic and Office Facility, Room 214, telephone number (517) 485-1476.

REQUIREMENTS

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<td>Typography</td>
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<td>ARTS 225</td>
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<td>Internet Literacy</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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<td>Science/Technology CORE Area (See Note 2)</td>
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<tr>
<td>Global Perspectives and Diversity CORE Area</td>
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<tr>
<td>Mathematics Competency (See page 23 for information on how to fulfill the requirement. Course work may be needed.)</td>
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CHOICE 2: Specialty (Choose one subchoice)

| Subchoice 2A: Art Specialty | 11-13 Credits |
| ARTS 102 | 2-Dimensional Design | 3 |
| ARTS 122 | Life Drawing | 3 |
| ARTS 215 | Humorous Illustration | 3 |
| IMG 101 | Basic Photography for Non-Majors | 2 |

| Subchoice 2B: Photography Specialty | |
| IMG 111 | Intro to Photographic Tech I | 4 |
| IMG 112 | Design for Imaging Tech | 3 |
| IMG 113 | Lighting Concepts/Applications | 3 |
| IMG 114 | Intro Photographic Color Tech | 3 |

MINIMUM TOTAL: 70

NOTES
1. The Portfolio is considered to be the final course in this curriculum. All other courses must already be completed or be taken concurrently with ARTS 269.
2. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.
3. It is recommended that all students entering this curriculum have computer experience in both Windows NT and Macintosh Operating Systems. This experience may come from life or work experience, or other studies. As well as CABS 190 Seminars - Introduction to Windows NT and Introduction to the Macintosh. Students should consult with an advisor in the Arts, Design and Multimedia Program if they are not sure about their computer skill level.
4. For graduation, students must have earned a minimum grade point of 2.0 in all courses with an ARTS and IMAG 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.

| Subchoice 2A: Art Specialty | |
| ARTS 102 | ARTS 132 | ARTS 173 | ARTS 228 |
| ARTS 131 | ARTS 151 | ARTS 232 | ARTS 233 |
| CISB 102 | ARTS 162 | ARTS 254 | ARTS 235 |
| CISB 209 | ARTS 171 | IMAG 101 | 2nd Ch. 1 |
| FILM 118 | ARTS 216 | 2nd Ch. 1 |

V

| ARTS 226 |
| ARTS 269 |
| ARTS 261 |
| Lim. Ch. 1 |

| Subchoice 2B: Photography Specialty | |
| ARTS 121 | ARTS 165 | ARTS 162 | ARTS 228 |
| CISB 102 | ARTS 171 | ARTS 173 | ARTS 233 |
| IMAG 111 | CISB 100 | ARTS 232 | ARTS 235 |
| IMAG 112 | FILM 118 | ARTS 254 | Lim. Ch. 1 |
| IMAG 113 | IMAG 114 | 2nd Ch. 1 |

V

| ARTS 236 |
| ARTS 269 |
| ARTS 281 |
| Lim. Ch. 1 |

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

LANSING COMMUNITY COLLEGE CATALOG 2000-2001
**COMPUTER GRAPHICS, MULTIMEDIA CERTIFICATE OF ACHIEVEMENT**

Curriculum Code: 0857 (Effective Fall 2000–Summer 2005)

This certificate of achievement is designed for students who hold a post-secondary degree (A.A., B.A., B.F.A., or M.F.A.) in the visual arts and wish to acquire or enhance their computer graphics skills to prepare for employment in the animation and multimedia fields.

**PREREQUISITES**

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

**INFORMATION**

Contact the Art, Design and Multimedia Program, Academic and Office Facility, Room 314, telephone number (517) 483-1478.

<table>
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<th>REQUIREMENTS</th>
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<td>ARTS 171</td>
<td>Computer Graphics/Photography (See Note 2)</td>
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<td>Computer Graphics/Web Design</td>
</tr>
<tr>
<td>ARTS 195</td>
<td>Employ/Busn Issues for Artists</td>
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<td>Advanced Digital Imaging</td>
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<td>Comp Graphics/Advanced Illustr</td>
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<td>ARTS 232</td>
<td>Comp Graphics/2-D Animation (See Note 2)</td>
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<td>Comp Graphics/2-D Interactive</td>
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<td>ARTS 282</td>
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<td>C130 102</td>
<td>Internet Literacy</td>
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**MINIMUM TOTAL** 41

**NOTES**

1. It is recommended that all students entering this curriculum have computer experience in both Windows NT and Macintosh Operating Systems. This experience may come from life or work experience, or other studies, as well as CABS 100 Seminars—Introduction to Windows NT and Introduction to the Macintosh. Students should consult with an advisor in the Art, Design and Multimedia Program if they are not sure about their computer skill level.

2. Students in this curriculum may be granted approval to waive the prerequisites for this course by contacting an advisor in the Art, Design and Multimedia Program.

3. For graduation, a student must have earned a minimum grade point of 2.0 in all courses with an ARTS 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.

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Students are responsible for completing all requirements as stated. The only official documentation of program completion status is an audit conducted by the Registrar's Office that is initiated when students apply for a degree or certificate. Students are expected to apply one semester prior to the semester they intend to graduate.
**COMPUTER GRAPHICS, WEB DESIGN ASSOCIATE IN APPLIED ARTS DEGREE**

Curriculum Code: 0914 (Effective Fall 2000–Summer 2005)

A Web designer combines typographical, graphics, animation, sound, and programming to create a complete experience for the Web visitor. The Web designer should have a broad fluency in all aspects of Web development and must learn to balance content and quality concerns with those of e-commerce. The Web designer can write code and create graphics, develop and organize content, build the structure of the site, and assist with interface issues. Web design is a cooperative process, and the designer may work with interface designers, marketing professionals, engineers, and computer technicians. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

**PREREQUISITES**

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

**GENERAL EDUCATION**

General education is an important part of this program and includes a mathematics competency requirement. To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics. For information on how to fulfill all general education requirements, see page 23.

**INFORMATION**

Contact the Art, Design, and Multimedia Program, Academic and Office Facility, Room 334, telephone number (517) 483-1478.

**REQUIREMENTS**  TOTAL: 61 CREDITS

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<td>Advanced Digital Imaging</td>
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<td>Info Sys Tech/Problem Solving</td>
<td>3</td>
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<td>Developing Pages for the Web</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 9 Credits

(See the GENERAL EDUCATION section above)

- Writing Core Area 3
- Speech Communication Core Area 3
- Science/Technology Core Area (See Note 3) 6
- Global Perspectives and Diversity Core Area 3
- Mathematics Competency (See pages 23 for information on how to fulfill this requirement. Course work may be needed.)

**MINIMUM TOTAL** 70

**NOTES**

1. It is recommended that all students entering this curriculum have computer experience in both Windows NT and Macintosh Operating Systems. This experience may come from life or work experience, or other studies, as well as CABS 100 Seminars—Introduction to the Macintosh and Introduction to Windows NT. Students should make an appointment with a Program Advisor in the Art, Design, and Multimedia Program if they are not sure about their computer skill level.

2. The Portfolio is considered to be the final course in this curriculum. All courses must be completed or be taken concurrently with ARTS 295.

3. Students completing REQUIREMENTS have fulfilled the requirements for this core area.

4. The LCC Computer Graphics Advisory Committee recommends that students in this curriculum also take MKTG 140 - Introduction to Advertising.

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

---

LANSING COMMUNITY COLLEGE CATALOG 2000-2001 ★ 61
### Certificate of Achievement

Curriculum Code: 0850 (Effective Fall 2000–Summer 2005)

This certificate of achievement is designed for artists who want to concentrate on the human figure as a subject matter in their artwork. Certificate holders may improve their opportunities for advancement in this or a related area. Additional education enhances an individual's employment opportunities.

#### Prerequisites

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

#### Information

Contact the Art, Design, and Multimedia Program, Academic and Office Facility, Room 314, telephone number (517) 483-1476.

#### Requirements

**Total: 32 Credits**

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<td>ARTS 131</td>
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<tr>
<td>ARTS 132</td>
<td>Life Drawing (See Note 1)</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 133</td>
<td>Surface Anatomy for Artists</td>
<td>2</td>
</tr>
<tr>
<td>ARTS 136</td>
<td>Figure Sculpture</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 203</td>
<td>Figure Painting (See Note 2)</td>
<td>4</td>
</tr>
<tr>
<td>ARTS 276</td>
<td>Art Independent Study</td>
<td>3</td>
</tr>
<tr>
<td>HUMS 211</td>
<td>History of Art I</td>
<td>4</td>
</tr>
<tr>
<td>HUMS 212</td>
<td>History of Art II</td>
<td>4</td>
</tr>
</tbody>
</table>

**Limited Choice Requirements**

**Total: 8 Credits**

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

**Choice 1:** Art

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARTS 140</td>
<td>Printmaking I</td>
<td>4</td>
</tr>
<tr>
<td>ARTS 141</td>
<td>Printmaking II</td>
<td>4</td>
</tr>
<tr>
<td>ARTS 145</td>
<td>Screen Printing I</td>
<td>4</td>
</tr>
<tr>
<td>ARTS 146</td>
<td>Screen Printing II</td>
<td>4</td>
</tr>
<tr>
<td>ARTS 151</td>
<td>Computer Graphics/Illustration</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 204</td>
<td>Watercolor I</td>
<td>4</td>
</tr>
<tr>
<td>ARTS 205</td>
<td>Watercolor II</td>
<td>4</td>
</tr>
<tr>
<td>ARTS 206</td>
<td>Advanced Watercolor</td>
<td>4</td>
</tr>
<tr>
<td>ARTS 216</td>
<td>Humorous Illustration</td>
<td>3</td>
</tr>
</tbody>
</table>

**Minimum Total:**

40 Credits

#### Notes

1. ARTS 132 must be taken twice for a total of 6 credits.
2. ARTS 203 must be taken once toward the requirements for this certificate, and may also be taken up to two additional times toward Choice 1 requirements for a total of 12 credits.

#### Suggested 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>
</tr>
</thead>
<tbody>
<tr>
<td>ARTS 102</td>
<td>ARTS 132</td>
<td>ARTS 136</td>
</tr>
<tr>
<td>ARTS 131</td>
<td>ARTS 132</td>
<td>ARTS 203</td>
</tr>
<tr>
<td>HUMS 211</td>
<td>ARTS 133</td>
<td>ARTS 276</td>
</tr>
<tr>
<td>Lim. Ch.</td>
<td>HUMS 212</td>
<td>Lim. Ch.</td>
</tr>
<tr>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
# Fine Art Foundation Associate in Applied Arts Degree

Curriculum Code: 0271 (Effective Fall 2000–Summer 2005)

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 consult an academic advisor or counselor before enrolling in any course.

## Prerequisites

Students should see the Course Descriptions section of this catalog or the Course Schedule for course prerequisite information. Basic skills assessment and advising information may be found on page 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, students may need to complete specific course work in mathematics. For information on how to fulfill all general education requirements, see page 25.

## Information

Contact the Art, Design and Multimedia Program, Academic and Office Facility, Room 314, telephone number (517) 483-1470.

## Requirements

**Total: 42 Credits**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARTS 102</td>
<td>2-Dimensional Design</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 153</td>
<td>3-Dimensional Design</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 131</td>
<td>Drawing I</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 132</td>
<td>Life Drawing (See Note 1)</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 133</td>
<td>Surface Anatomy for Artists</td>
<td>2</td>
</tr>
<tr>
<td>ARTS 136</td>
<td>Figure Sculpture</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 140</td>
<td>Printmaking I</td>
<td>4</td>
</tr>
<tr>
<td>ARTS 145</td>
<td>Screen Printing I</td>
<td>4</td>
</tr>
<tr>
<td>ARTS 190</td>
<td>Metal and Framing Techniques</td>
<td>1</td>
</tr>
<tr>
<td>ARTS 200</td>
<td>Painting I</td>
<td>4</td>
</tr>
<tr>
<td>ARTS 294</td>
<td>Watercolor I</td>
<td>4</td>
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<tr>
<td>HUMS 211</td>
<td>History of Art I</td>
<td>4</td>
</tr>
<tr>
<td>HUMS 212</td>
<td>History of Art II</td>
<td>4</td>
</tr>
</tbody>
</table>

**Limited Choice Requirements**

**Total: 26 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</th>
</tr>
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<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 (See Note 2)</td>
</tr>
<tr>
<td>Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)</td>
</tr>
</tbody>
</table>

### Choice 2: Art

<table>
<thead>
<tr>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARTS 132</td>
</tr>
<tr>
<td>ARTS 137</td>
</tr>
<tr>
<td>ARTS 141</td>
</tr>
<tr>
<td>ARTS 146</td>
</tr>
<tr>
<td>ARTS 151</td>
</tr>
<tr>
<td>ARTS 171</td>
</tr>
<tr>
<td>ARTS 195</td>
</tr>
<tr>
<td>ARTS 201</td>
</tr>
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<td>ARTS 203</td>
</tr>
<tr>
<td>ARTS 206</td>
</tr>
<tr>
<td>ARTS 209</td>
</tr>
</tbody>
</table>

**Minimum Total**: 68

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**Notes**

1. ARTS 132 must be taken toward the requirements for this degree and may also be taken one more time toward Choice 2 requirements 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.
GRAPHIC DESIGN
ASSOCIATE IN APPLIED ARTS DEGREE

Curriculum Code: 0219 (Effective Fall 2000–Summer 2005)

A graphic designer is an artist who creatively and effectively designs informational or promotional materials for publication and/or use in a variety of mass media situations. Artistic skills related to producing effective visual information are essential for a graphic designer. An understanding of the principles of typography, color theory, computer graphic applications, and pre-press techniques is necessary. Graphic designers are employed by design studios, advertising agencies, printing companies, publishers, newspapers, sign companies, and businesses that generate their own publications. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

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

GENERAL EDUCATION
General education is an important part of this program and includes a mathematics competency requirement. To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics. For information on how to fulfill all general education requirements, see page 23.

INFORMATION
Contact the Art, Design and Multimedia Program, Academic and Office Facility, Room 314, telephone number (517) 483-1476.

REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
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</thead>
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<tr>
<td>ARTS 102</td>
<td>2-Dimensional Design</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 131</td>
<td>Drawing I</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 132</td>
<td>Life Drawing</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 137</td>
<td>Perspective Drawing</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 162</td>
<td>Typography</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 171</td>
<td>Computer Graphics/Photography</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 175</td>
<td>Electronic Design</td>
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<tr>
<td>ARTS 195</td>
<td>Employ/OutOfState Issues for Artists</td>
<td>1</td>
</tr>
<tr>
<td>ARTS 228</td>
<td>Advanced Digital Imaging</td>
<td>1</td>
</tr>
<tr>
<td>ARTS 251</td>
<td>Graphic Design I</td>
<td>4</td>
</tr>
<tr>
<td>ARTS 252</td>
<td>Graphic Design II</td>
<td>4</td>
</tr>
<tr>
<td>ARTS 253</td>
<td>Graphic Design III</td>
<td>4</td>
</tr>
<tr>
<td>ARTS 257</td>
<td>Computer Prepress Prod Tech</td>
<td>4</td>
</tr>
<tr>
<td>ARTS 269</td>
<td>The Portfolio</td>
<td>2</td>
</tr>
<tr>
<td>ARTS 281</td>
<td>Art Internship</td>
<td>3</td>
</tr>
<tr>
<td>ARWS 133</td>
<td>Introduction to Papemaking</td>
<td>3</td>
</tr>
<tr>
<td>CASB 195</td>
<td>Microsoft Windows</td>
<td>1</td>
</tr>
<tr>
<td>HUMS 211</td>
<td>History of Art I</td>
<td>3</td>
</tr>
<tr>
<td>HUMS 212</td>
<td>History of Art II</td>
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<tr>
<td>MKTG 140</td>
<td>Introduction to Advertising</td>
<td>3</td>
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LIMITED CHOICE REQUIREMENTS

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<td>ARTS 131</td>
<td>Drawing I</td>
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<tr>
<td>ARTS 132</td>
<td>Life Drawing</td>
</tr>
<tr>
<td>ARTS 137</td>
<td>Perspective Drawing</td>
</tr>
<tr>
<td>ARTS 162</td>
<td>Typography</td>
</tr>
<tr>
<td>ARTS 195</td>
<td>Employ/OutOfState Issues for Artists</td>
</tr>
<tr>
<td>ARTS 228</td>
<td>Advanced Digital Imaging</td>
</tr>
<tr>
<td>ARTS 251</td>
<td>Graphic Design I</td>
</tr>
<tr>
<td>ARTS 252</td>
<td>Graphic Design II</td>
</tr>
<tr>
<td>ARTS 253</td>
<td>Graphic Design III</td>
</tr>
<tr>
<td>ARTS 257</td>
<td>Computer Prepress Prod Tech</td>
</tr>
<tr>
<td>ARTS 269</td>
<td>The Portfolio</td>
</tr>
<tr>
<td>ARWS 131</td>
<td>Intro to Computer Illustration</td>
</tr>
</tbody>
</table>

HUMOROUS ILLUSTRATION
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 0954 (Effective Fall 2000–Summer 2005)

This certificate of achievement program consists of practical hands-on courses that provide students with the necessary technical knowledge and skills needed to create humorous illustrations, cartooning, and caricatures. Certificate holders may improve their opportunities for advancement in this or a related field. Additional education enhances an individual's employment opportunities.

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

INFORMATION
Contact the Art, Design and Multimedia Program, Academic and Office Facility, Room 314, telephone number (517) 483-1476.

REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
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<tr>
<td>ARTS 102</td>
<td>2-Dimensional Design</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 131</td>
<td>Drawing I</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 132</td>
<td>Life Drawing</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 137</td>
<td>Perspective Drawing</td>
<td>2</td>
</tr>
<tr>
<td>ARTS 162</td>
<td>Typography</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 195</td>
<td>Employ/OutOfState Issues for Artists</td>
<td>1</td>
</tr>
<tr>
<td>ARTS 228</td>
<td>Illustration Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 251</td>
<td>Humorous Illustration I</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 252</td>
<td>Humorous Illustration II</td>
<td>3</td>
</tr>
<tr>
<td>ARTS 269</td>
<td>The Portfolio</td>
<td>2</td>
</tr>
<tr>
<td>ARWS 131</td>
<td>Intro to Computer Illustration</td>
<td>1</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.

ARTS 102 ARTS 132 ARTS 137 ARTS 171 ARTS 228
ARTS 131 ARTS 175 ARTS 176 ARWS 123 ARTS 253
ARTS 162 ARWS 217 ARWS 195 ARTS 269 ARWS 257
ARTS 217 ARTS 227 ARTS 228 Lim.Ch.1 HUMS 211
ARTS 195 ARTS 269 Lim.Ch.1 Lim.Ch.1

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

Curriculum Code: 0845 (Effective Fall 2000–Summer 2005)

This certificate program is intended for individuals who are currently employed in the automotive repair industry. Students are trained specifically in the area of alternative fuels and are prepared to take the State of Michigan Mechanics Certification Tests to become automotive technicians through the Secretary of State. State certification tests are available at any Michigan Secretary of State Office.

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

INFORMATION
Contact the Technology Careers Department, Gannon Vocational-Technical Center, Room 136, telephone number (517) 483-1336.

REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUTO 100</td>
<td>Auto Service I</td>
<td>3</td>
</tr>
<tr>
<td>AUTO 215</td>
<td>Engine Performance/Tune-Up</td>
<td>5</td>
</tr>
<tr>
<td>AUTO 225</td>
<td>Automotive Computers</td>
<td>5</td>
</tr>
<tr>
<td>AUTO 250</td>
<td>Intro to Alternative Fuels</td>
<td>2</td>
</tr>
<tr>
<td>AUTO 261</td>
<td>Alternative Fuels - CNG</td>
<td>3</td>
</tr>
</tbody>
</table>

TOTAL: 18 CREDITS

NOTE
1. Prerequisites to courses may be waived based on experience. See a program advisor prior to registration for more information.

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

<table>
<thead>
<tr>
<th>I</th>
<th>II</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUTO 100</td>
<td>AUTO 225</td>
</tr>
<tr>
<td>AUTO 215</td>
<td>AUTO 260</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL: 18 CREDITS

AUTO AC/ELECTRICAL ACCESSORIES
CERTIFICATE OF COMPLETION

Curriculum Code: 0846 (Effective Fall 2000–Summer 2005)

This certificate program is intended for individuals who are currently employed in the automotive repair industry. Students are prepared to take the State of Michigan Mechanics Certification Tests to become licensed automotive technicians through the Secretary of State. State certification tests are available at any Michigan Secretary of State Office.

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

INFORMATION
Contact the Technology Careers Department, Gannon Vocational-Technical Center, Room 136, telephone number (517) 483-1336.

REQUIREMENTS

<table>
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<tr>
<th>CODE</th>
<th>TITLE</th>
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<tr>
<td>AUTO 100</td>
<td>Auto Service I</td>
<td>3</td>
</tr>
<tr>
<td>AUTO 110</td>
<td>Auto Electrical Theory</td>
<td>5</td>
</tr>
<tr>
<td>AUTO 160</td>
<td>Auto Heat &amp; Air Conditioning</td>
<td>3</td>
</tr>
</tbody>
</table>

TOTAL: 11 CREDITS

MINIMUM TOTAL: 11 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>
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<tbody>
<tr>
<td>AUTO 100</td>
<td>AUTO 160</td>
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<tr>
<td>AUTO 110</td>
<td>AUTO 160</td>
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</table>

MINIMUM TOTAL: 11 CREDITS

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

2000-2001 Catalog Lansing Community College

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>Course</th>
<th>Course</th>
<th>Course</th>
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</tr>
</thead>
<tbody>
<tr>
<td>AUTO 100</td>
<td>AUTO 110</td>
<td>AUTO 144</td>
<td>AUTO 147</td>
</tr>
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<td>AUTO 141</td>
<td>AUTO 142</td>
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<td>AUTO 148</td>
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<td>AUTO 143</td>
<td>Lim.Ch.</td>
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<td>AUTO 150</td>
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<tr>
<td>AUTO 145</td>
<td>Lim.Ch.</td>
<td>AUTO 285</td>
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</tbody>
</table>

AUTO BODY REPAIR
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 0166 (Effective Fall 2000–Summer 2005)
This program provides the technological 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.

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
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<tbody>
<tr>
<td>AUTO 100</td>
<td>Auto Service I</td>
</tr>
<tr>
<td>AUTO 141</td>
<td>Non-Structural Repair (See Note 1)</td>
</tr>
<tr>
<td>AUTO 142</td>
<td>Advanced Non-Structural Repair</td>
</tr>
<tr>
<td>AUTO 143</td>
<td>Auto Body Welding and Cutting (See Note 1)</td>
</tr>
<tr>
<td>AUTO 144</td>
<td>Auto Body Structural Repair</td>
</tr>
<tr>
<td>AUTO 145</td>
<td>Introduction to Refinishing (See Note 1)</td>
</tr>
<tr>
<td>AUTO 146</td>
<td>Advanced Refinishing</td>
</tr>
<tr>
<td>MATH 050</td>
<td>Math-Principles and Practices</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL: 35 CREDITS

NOTE
1. Students must obtain department approval from the Technology Careers Department prior to registering for these courses.

SUGGESTED COURSE SEQUENCE
Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below for example, those who are part-time, have transferred 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>Course</th>
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<tbody>
<tr>
<td>AUTO 100</td>
<td>AUTO 142</td>
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<tr>
<td>AUTO 141</td>
<td>AUTO 144</td>
</tr>
<tr>
<td>AUTO 143</td>
<td>AUTO 146</td>
</tr>
<tr>
<td>AUTO 145</td>
<td>MATH 050</td>
</tr>
</tbody>
</table>

LIMITED CHOICE REQUIREMENTS: TOTAL: 16–17 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
- Social/Technology Core Area: 3 credits
- Global Perspectives and Diversity Core Area: 3 credits
- Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)

CHOICE 2: Automotive Related
- AUTO 166 Auto Body Repair and Painting: 4 credits
- AUTO 215 Engine Performance/Tune-Up: 5 credits
- AUTO 225 Automotive Computers: 5 credits

MINIMUM TOTAL: 70 CREDITS

NOTE
1. Students must obtain department approval from the Technology Careers Department prior to registering for these courses.
## AUTO STEER/SUSPENSION/ BRAKES
### CERTIFICATE OF COMPLETION

**Curriculum Code: 0851 (Effective Fall 2000–Summer 2005)**

This certificate program is intended for individuals who are currently employed in the automotive repair industry. Students are prepared to take the State of Michigan Mechanics Certification Tests and become licensed automotive technicians through the Secretary of State. State certification tests are available at any Michigan Secretary of State Office.

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

### INFORMATION
Contact the Technology Careers Department, Gannon Vocational-Technical Center, Room 136, telephone number (517) 483-1336.

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
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<tr>
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<tr>
<td>AUTO 100</td>
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<tr>
<td>AUTO 140</td>
<td>Automotive Brakes</td>
</tr>
<tr>
<td>AUTO 150</td>
<td>Auto Steering &amp; Suspension</td>
</tr>
<tr>
<td>AUTO 230</td>
<td>Anti-Lock Braking Systems</td>
</tr>
</tbody>
</table>

**MINIMUM TOTAL**

12

**NOTE**
1. Prerequisites to courses may be waived based on experience. See a program advisor prior to registration for more information.

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

<table>
<thead>
<tr>
<th>AUTO 100</th>
<th>AUTO 230</th>
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<tbody>
<tr>
<td>AUTO 140</td>
<td>AUTO 150</td>
</tr>
</tbody>
</table>

## AUTOMOTIVE DRIVE LINES
### CERTIFICATE OF COMPLETION

**Curriculum Code: 0856 (Effective Fall 2000–Summer 2005)**

This certificate program is intended for individuals who are currently employed in the automotive repair industry. Students are prepared to take the State of Michigan Mechanics Certification Tests to become licensed automotive technicians through the Secretary of State. State certification tests are available at any Michigan Secretary of State Office.

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

### INFORMATION
Contact the Technology Careers Department, Gannon Vocational-Technical Center, Room 136, telephone number (517) 483-1336.

<table>
<thead>
<tr>
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<td>AUTO 100</td>
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<tr>
<td>AUTO 120</td>
<td>Auto Drive Train</td>
</tr>
<tr>
<td>AUTO 121</td>
<td>Automatic Transmissions I</td>
</tr>
<tr>
<td>AUTO 122</td>
<td>Automatic Transmissions II</td>
</tr>
<tr>
<td>AUTO 130</td>
<td>Automotive Engines</td>
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</tbody>
</table>

**MINIMUM TOTAL**

17

**NOTE**
1. Prerequisites to courses may be waived based on experience. See a program advisor prior to registration for more information.

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

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<td>AUTO 120</td>
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<td>AUTO 121</td>
</tr>
<tr>
<td>AUTO 122</td>
</tr>
<tr>
<td>AUTO 130</td>
</tr>
</tbody>
</table>
AUTOMOTIVE TECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 0238 (Effective Fall 2000–Summer 2005)

This program prepares individuals to work in the automotive field as technicians. Students learn all aspects of automobile repair, diagnosis, and maintenance. This program prepares the individual to take the State of Michigan Mechanics Certification Tests and become licensed automotive technicians through the Secretary of State. State certification tests are available at any Michigan Secretary of State Office.

PREREQUISITES

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

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. To fulfill the mathematics competency requirement, students may complete specific coursework in mathematics. For information on how to fulfill all general education requirements, see page 23.

INFORMATION

Contact the Technology Services Department, Gannon Vocational–Technical Center, Room 136, telephone number (517) 483-1308.

REQUIREMENTS

Code | Title | TOTAL: 47 CREDITS
-- | -- | --
AUTO 100 | Auto Service I | 3
AUTO 110 | Auto Electrical Theory | 5
AUTO 120 | Auto Drive Train | 3
AUTO 121 | Automatic Transmissions I | 5
AUTO 122 | Automatic Transmissions II | 3
AUTO 130 | Automotive Engines | 3
AUTO 140 | Automotive Brakes | 3
AUTO 150 | Auto Steering & Suspension | 3
AUTO 155 | Auto Heat & Air Conditioning | 3
AUTO 215 | Engine Performance/Tune-Up | 5
AUTO 225 | Automotive Computers | 3
AUTO 230 | Anti-Lock Braking Systems | 3
WRIT 124 | Technical Writing | 3

LIMITED CHOICE REQUIREMENTS

TOTAL: 18 CREDITS

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

CHOICE 1: General Education Core Areas

(See the GENERAL EDUCATION section above)

9 Credits

Writing Core Area (See Note 1) | 9
Speech Communication Core Area | 3
Science/Technology Core Area | 3
Global Perspectives and Diversity Core Area | 3
Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)

CHOICE 2: Automotive Related

9 Credits

AUTO 133 | Small Engine Repair | 3
AUTO 141 | Non-Structural Repair | 3
AUTO 145 | Introduction to Refinishing | 3
AUTO 220 | Advanced Computer Diagnosis | 2
AUTO 280 | Automotive Service Laboratory | 6
AUTO 285 | Automotive Internship | 6
MACH 155 | Machine Tool Survey | 3
MACH 135 | Metallurgy and Heat Treat | 4

MINIMUM TOTAL

85

NOTE

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

SUGGESTED COURSE SEQUENCE

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

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<td>AUTO 130</td>
<td>Automotive Engines</td>
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<tr>
<td>AUTO 140</td>
<td>Automotive Brakes</td>
<td>3</td>
</tr>
<tr>
<td>AUTO 150</td>
<td>Auto Steering &amp; Suspension</td>
<td>3</td>
</tr>
<tr>
<td>AUTO 160</td>
<td>Auto Heat &amp; Air Conditioning</td>
<td>5</td>
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<tr>
<td>AUTO 215</td>
<td>Engine Performance/Tune-Up</td>
<td>4</td>
</tr>
<tr>
<td>AUTO 225</td>
<td>Automotive Computers</td>
<td>3</td>
</tr>
<tr>
<td>AUTO 280</td>
<td>Automotive Service Laboratory</td>
<td>6</td>
</tr>
<tr>
<td>MATH 050</td>
<td>Math-Principles and Practices</td>
<td>4</td>
</tr>
</tbody>
</table>

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 suggested below (for example, those who are part-time, have transferred in credits 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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<td>Auto Electrical Theory</td>
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<td>AUTO 140</td>
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<td>Auto Heat &amp; Air Conditioning</td>
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<td>AUTO 225</td>
<td>Automotive Computers</td>
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<td>AUTO 280</td>
<td>Automotive Service Laboratory</td>
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<tr>
<td>MATH 050</td>
<td>Math-Principles and Practices</td>
<td>4</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL

40

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

**Curriculum Code:** 0848 (Effective Fall 2000–Summer 2005)

This certificate program is intended for individuals who are currently employed in the automotive repair industry. Students are prepared to take the State of Michigan Mechanics Certification Tests to become licensed automotive technicians through the Secretary of State. State certification tests are available at any Michigan Secretary of State Office.

**PREREQUISITES**

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

**INFORMATION**

Contact the Technology Careers Department, Gannon Vocational-Technical Center, Room 136, telephone number (517) 483-1336.

<table>
<thead>
<tr>
<th>COURSE</th>
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<th>CREDIT HOURS</th>
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<tr>
<td>AUTO 100</td>
<td>Auto Service I</td>
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</tr>
<tr>
<td>AUTO 110</td>
<td>Auto Electrical Theory</td>
<td>5</td>
</tr>
<tr>
<td>AUTO 215</td>
<td>Engine Performance/Tune-Up</td>
<td>5</td>
</tr>
<tr>
<td>AUTO 225</td>
<td>Automotive Computers</td>
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<tr>
<td>AUTO 251</td>
<td>Advanced Computer Diagnosis</td>
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**TOTAL: 20 CREDITS**

**MINIMUM TOTAL**

20

**NOTE**

1. Prerequisites to courses may be waived based on experience. See a program advisor prior to registration for more information.

**SUGGESTED COURSE SEQUENCE**

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

| AUTO 100 | AUTO 225 |
| AUTO 110 | AUTO 251 |
| AUTO 215 |        |
AIRFRAME MAINTENANCE TECH ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 0757 (Effective Fall 2000–Summer 2005)

Airframe maintenance technicians maintain aircraft in accordance with Federal Aviation Regulations. Airframe technicians perform a wide variety of repairs and alterations to sheet metal and composite aircraft structures. In addition, they inspect and repair or replace complex aircraft components associated with hydraulic, pneumatic, communication/navigation, fuel and flight control systems. Aviation maintenance technicians are employed throughout the world maintaining aircraft for major air carriers, commuter airlines, air freight operators, corporate flight departments, fixed base operators and a variety of other specialized aviation businesses. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

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

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. To fulfill the mathematics competency requirement, students may need to complete specific coursework in mathematics. For information on how to fulfill all general education requirements, see page 23.

INFORMATION

Contact the Aviation Program at the LCC Aviation Center, telephone number (517) 485-1406.

REQUIREMENTS

<table>
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<td>AVAF 125</td>
<td>Aircraft Systems I</td>
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<td>AVAF 126</td>
<td>Aircraft Systems II</td>
<td>6</td>
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<td>AVAF 127</td>
<td>Aircraft Systems III</td>
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<tr>
<td>AVAF 134</td>
<td>Aircraft Instruments</td>
<td>2</td>
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<td>AVAF 208</td>
<td>Aircraft Structures I</td>
<td>4</td>
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<td>Aircraft Structures II</td>
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<tr>
<td>AVAF 210</td>
<td>Aircraft Structures III</td>
<td>3</td>
<td></td>
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<tr>
<td>AVAF 211</td>
<td>Aircraft Electrical I</td>
<td>4</td>
<td></td>
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<td>AVAF 212</td>
<td>Aircraft Electrical II</td>
<td>4</td>
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<tr>
<td>AVAF 246</td>
<td>National Airframe Cert Proc</td>
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<tr>
<td>AVGM 111</td>
<td>Aviation General I</td>
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<td>AVGM 112</td>
<td>Aviation General II</td>
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<td>AVGM 113</td>
<td>Aviation General III</td>
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<td>AVGM 114</td>
<td>Material and Processes</td>
<td>5</td>
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<tr>
<td>WELD 210</td>
<td>Aircraft Welding</td>
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TOTAL: 54 CREDITS

LIMITED CHOICE REQUIREMENTS

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
<th>Hours</th>
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Complete the indicated number of credits from each CHOICE listed below.

CHOICE 1: General Education Core Area

12 Credits

(See the GENERAL EDUCATION section above)

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

MINIMUM TOTAL 66

NOTE

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 90 percent to be approved for the Federal Aviation Administration written tests.

SUGGESTED COURSE SEQUENCE

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

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<td>AVFM</td>
<td>AVAF 125</td>
<td>AVAF 127</td>
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<td>AVFM</td>
<td>WELD 210</td>
<td>AVAF 212</td>
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<td>AVAF 246</td>
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AVIATION FLIGHT TECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 0259 (Effective Fall 2000–Summer 2005)

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 at-home training (the previous experience) or build on previous experience of the student. Students entering this program are required to accomplish an FAA 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 1,200 to 1,500 flight hours, they are competitive for hiring by regional or commuter airlines as First Officers.

PREREQUISITES

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

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics. For information on how to fulfill all general education requirements, see page 23.

INFORMATION

Contact the Aviation Program at the LCC Aviation Center, telephone number (517) 480-1460.

REQUIREMENTS

<table>
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<tr>
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<td>AVAF 134</td>
<td>Aircraft Instruments</td>
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<tr>
<td>AVFT 201</td>
<td>Flight Training I</td>
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<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>
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<tr>
<td>AVGS 101</td>
<td>Private Pilot Ground School</td>
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<td>AVGS 211</td>
<td>Instrument Pilot Ground School</td>
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<td>AVGS 221</td>
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<td>AVST 211</td>
<td>Flight Simulator I</td>
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<tr>
<td>AVST 212</td>
<td>Flight Simulator II</td>
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<td>AVST 213</td>
<td>Flight Simulator III</td>
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<tr>
<td>AVST 214</td>
<td>Flight Simulator IV</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: 3 credits
- Speech Communication Core Area: 3 credits
- Science/Technology Core Area: 3 credits
- Global Perspectives and Diversity Core Area: 3 credits
- Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)

CHOICE 2: Advanced Flight Training
- AVFT 205: CPI Flight Training: 3.5 credits
- AVFT 206: Flight Inst Instrument Flight: 2.5 credits
- AVFT 207: Multi-Engine Flight Training: 1.5 credits
- AVFT 208: Multi-Engine Instructor Flight: 7.5 credits
- AVFT 224: Tail Wheel Transition: 1 credit
- AVGS 222: Flight Instruct Ground School: 4 credits
- AVST 215: Multi-Engine Flight Simulator: 1 credit

MINIMUM TOTAL: 63 credits

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

LANSING COMMUNITY COLLEGE CATALOG 2000-2001
AVIATION

2000-2001 Catalog Lansing Community College

www.lcc.edu

AVIONICS
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 0260 (Effective Fall 2000-Summer 2005)

Aviation electronics (aviionics) is the application of electronics to aviation. Aviionics technicians install and service complex communication, navigation, radar, and avionics 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 Aviionics students can qualify for several industry training certifications from Allied Signal Aerospace. In addition, LCC offers on-site testing for the General Radiotelephone Operator License. Although students do not need any special skills to start the Aviionics Program, they should be aware that color blindness may cause them difficulty because various electronic components are color-coded.

PREREQUISITES

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

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics. For information on how to fulfill all general education requirements, see page 23.

INFORMATION

Contact the Aviation Program at the LCC Aviation Center, telephone number (517) 483-1406.

REQUIREMENTS

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<thead>
<tr>
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<th>TITLE</th>
<th>CREDIT HOURS</th>
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<td>AVAF 130</td>
<td>Avionics Airframe Applications</td>
<td>3</td>
</tr>
<tr>
<td>AVEL 150</td>
<td>Avionics Install/General</td>
<td>2</td>
</tr>
<tr>
<td>AVEL 151</td>
<td>Avionics Install/General Lab</td>
<td>1</td>
</tr>
<tr>
<td>AVEL 190</td>
<td>Receiver Troubleshooting</td>
<td>2</td>
</tr>
<tr>
<td>AVEL 191</td>
<td>Receiver Troubleshooting Lab</td>
<td>1</td>
</tr>
<tr>
<td>AVEL 200</td>
<td>Flight Line Testing</td>
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<td>AVEL 201</td>
<td>Flight Line Testing Lab</td>
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<td>AVEL 220</td>
<td>Avionics Systems I</td>
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<td>AVEL 225</td>
<td>Avionics Licensing/Regulations</td>
<td>1</td>
</tr>
<tr>
<td>AVEL 226</td>
<td>FAA Rules/Regs. Avionics Techs</td>
<td>1</td>
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<tr>
<td>AVEL 230</td>
<td>Avionics Systems II</td>
<td>3</td>
</tr>
<tr>
<td>AVEL 231</td>
<td>Avionics Systems II Lab</td>
<td>2</td>
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<tr>
<td>AVIR 140</td>
<td>Avionics Instruments I</td>
<td>1</td>
</tr>
<tr>
<td>GISB 200</td>
<td>Info Sys Tech/Problem Solving</td>
<td>3</td>
</tr>
<tr>
<td>ELCT 101</td>
<td>Analog Problems</td>
<td>5</td>
</tr>
<tr>
<td>ELCT 109</td>
<td>DC Circuits</td>
<td>3</td>
</tr>
<tr>
<td>ELCT 110</td>
<td>AC Circuits</td>
<td>3</td>
</tr>
<tr>
<td>ELCT 112</td>
<td>Transistors</td>
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<tr>
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<td>Digital Basics</td>
<td>3</td>
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<tr>
<td>ELCT 211</td>
<td>Linear Circuits I</td>
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</tr>
<tr>
<td>ELCT 212</td>
<td>Linear Circuits II</td>
<td>3</td>
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<tr>
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<td>Advanced Digital Electronics</td>
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<tr>
<td>SPCCH 110</td>
<td>Oral Communication in the Workplace</td>
<td>3</td>
</tr>
<tr>
<td>WRIT 124</td>
<td>Technical Writing</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

<table>
<thead>
<tr>
<th>CREDITS</th>
<th>REQUIREMENTS</th>
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</thead>
<tbody>
<tr>
<td>3</td>
<td>(See the GENERAL EDUCATION section above)</td>
</tr>
<tr>
<td>0</td>
<td>Writing Core Area (See Note 1)</td>
</tr>
<tr>
<td>0</td>
<td>Speech Communication Core Area (See Note 1)</td>
</tr>
<tr>
<td>0</td>
<td>Science/Technology Core Area (See Note 1)</td>
</tr>
<tr>
<td>3</td>
<td>Global Perspectives and Diversity Core Area</td>
</tr>
<tr>
<td>0</td>
<td>Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL 69

NOTE

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

SUGGESTED COURSE SEQUENCE

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

<table>
<thead>
<tr>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
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</thead>
<tbody>
<tr>
<td>AVEL 130</td>
<td>AVEL 190</td>
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<td>AVEL 140</td>
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<td>ELCT 109</td>
<td>ELCT 112</td>
<td>AVEL 291</td>
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<td>ELCT 120</td>
<td></td>
<td>Lim.Ch.</td>
</tr>
<tr>
<td>SPCCH 110</td>
<td>ELCT 131</td>
<td></td>
<td></td>
</tr>
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</table>

AVEL 225
AVEL 226
AVEL 230
AVEL 231
ELCT 212
WRIT 124

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

72 • LANSING COMMUNITY COLLEGE CATALOG 2000-2001
AVIONICS INSTALLATION
CERTIFICATE OF COMPLETION

Curriculum Code: 0847 (Effective Fall 2000-Summer 2005)

Avionics (airframe) is the application of electronics to aviation. This program is designed for students who are interested in installing and testing complex communication, navigation, radar and autopilot equipment in aircraft. Employment opportunities are at airports that have avionics sales and service facilities, airlines and aircraft manufacturers.

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 Aviation Program at the LCC Aviation Center, telephone number (517) 483-1406.

REQUIREMENTS

<table>
<thead>
<tr>
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<th>TITLE</th>
<th>CREDITS</th>
</tr>
</thead>
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<tr>
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<td>Avionics Airframe Applications</td>
<td>3</td>
</tr>
<tr>
<td>AVEL 150</td>
<td>Avionics Install/Generat</td>
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<tr>
<td>AVEL 151</td>
<td>Avionics Install/Generat Lab</td>
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<tr>
<td>AVEL 206</td>
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<td>AVEL 291</td>
<td>Flight Line Testing Lab</td>
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<td>AVM 111</td>
<td>Aviation General III</td>
<td>4</td>
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<tr>
<td>AVIR 140</td>
<td>Avionics Instruments I</td>
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<td>Analog Problems</td>
<td>5</td>
</tr>
<tr>
<td>ELCT 109</td>
<td>DC Circuits</td>
<td>3</td>
</tr>
<tr>
<td>ELCT 116</td>
<td>AC Circuits</td>
<td>3</td>
</tr>
<tr>
<td>ELCT 120</td>
<td>Programming Preparation</td>
<td>2</td>
</tr>
</tbody>
</table>

TOTAL: 27 CREDITS

LIMITED CHOICE REQUIREMENTS

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

CHOICE 1: Practical Experience 2 Credits
- AVEL 297 Avionics Internship 2
- AVEL 299 Advanced Avionics Laboratory 2

MINIMUM TOTAL 29

NOTE

1. Although students do not need any special skills to start the Avionics Certificate Program, they should be aware that color blindness may cause them difficulty because various electronic components are color coded.

SUGGESTED COURSE SEQUENCE

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>AVEL 151</td>
<td>AVEL 201</td>
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<td>AVM 111</td>
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<td>ELCT 110</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.

<table>
<thead>
<tr>
<th>COURSE CODE</th>
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</thead>
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<tr>
<td>AVGM 111</td>
<td>AVAF 212</td>
<td>AVPP 253</td>
<td>AVPP 261</td>
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<tr>
<td>AVGM 112</td>
<td>AVPP 241</td>
<td>AVPP 255</td>
<td>AVPP 263</td>
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<td>AVPP 251</td>
<td>AVPP 257</td>
<td>AVPP 265</td>
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<tr>
<td>AVGM 114</td>
<td>Lim.Ch.</td>
<td>AVPP 259</td>
<td>AVPP 267</td>
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### PREREQUISITES

Students should see the Course Descriptions section of this catalog or the Course 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, students may need to complete specific course work in mathematics. For information on how to fulfill all general education requirements, see page 23.

### INFORMATION

Contact the Aviation Program at the LCC Aviation Center, telephone number (517) 483-1406.

### REQUIREMENTS

**TOTAL: 59 CREDITS**

<table>
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<th>COURSE CODE</th>
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<tr>
<td>AVAF 212</td>
<td>Aircraft Electrical II</td>
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<tr>
<td>AVGM 111</td>
<td>Aviation General I</td>
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<td>AVGM 113</td>
<td>Aviation General III</td>
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<td>AVGM 114</td>
<td>Material and Processes</td>
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<td>AVPP 241</td>
<td>Reciprocating Engine</td>
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<td>AVPP 251</td>
<td>Reciprocating Engine Systems</td>
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<td>AVPP 255</td>
<td>Reciprocating Ignition Systems</td>
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<td>AVPP 257</td>
<td>Reciprocating Induction System</td>
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<td>AVPP 259</td>
<td>Aircraft Propeller Systems</td>
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<td>AVPP 261</td>
<td>Turbine Engine I</td>
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<td>Turbine Engine Systems</td>
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<td>AVPP 265</td>
<td>Powerplant Instruments</td>
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<tr>
<td>AVPP 267</td>
<td>National Powerplant Cert Proc</td>
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</table>

### LIMITED CHOICE REQUIREMENTS

**TOTAL: 12 CREDITS**

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

**CHOICE 1: General Education Core Areas**

**12 Credits**

(See the GENERAL EDUCATION section above)

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

**MINIMUM TOTAL**

71

**NOTE**

1. Students must complete each course with a minimum grade of 70 percent and pass Pre-Tests for General and Powerplant with a minimum grade of 80 percent to be approved by the Federal Aviation Administration written tests.

---

*Students are responsible for completing all requirements as stated. The only official documentation of program completion status is an audit conducted by the Registrar’s Office that is initiated when students apply for a degree or certificate. Students are expected to apply one semester prior to the semester they intend to graduate.*
BUILDING MAINTENANCE ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 0211 (Effective Fall 2000–Summer 2005)

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

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. To fulfill the mathematics competency requirement, students must take at least one course in mathematics. For information on how to fulfill all general education requirements, see page 23.

INFORMATION

Contact the Technology Careers Department, Gannon Vocational-Technical Center, Room 136, telephone number (517) 483-1336.

REQUIREMENTS

<table>
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<th>CODE</th>
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<tr>
<td>BLDR</td>
<td>102 General Home Maintenance</td>
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<tr>
<td>BLDT</td>
<td>121 Residential Framing</td>
<td>4</td>
</tr>
<tr>
<td>BLDT</td>
<td>122 Interior Carpentry</td>
<td>4</td>
</tr>
<tr>
<td>ELTE</td>
<td>106 Electrical Safety Practices</td>
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<tr>
<td>ELTE</td>
<td>112 Basic Wiring Installation</td>
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<td>HDRT</td>
<td>105 Pest/Problem Ornamental Plants</td>
<td>2</td>
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<tr>
<td>HVAC</td>
<td>100 Fundamentals of HVAC</td>
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<tr>
<td>HVAC</td>
<td>105 Sheet Metal Fabrication/Install</td>
<td>2</td>
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<tr>
<td>HVAC</td>
<td>110 Applied Electricity I</td>
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<tr>
<td>HVAC</td>
<td>111 Applied Electricity II</td>
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<tr>
<td>HVAC</td>
<td>120 Heating I</td>
<td>4</td>
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<tr>
<td>HVAC</td>
<td>130 Air Conditioning I</td>
<td>4</td>
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<tr>
<td>HVAC</td>
<td>211 Schematics</td>
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<tr>
<td>HVAC</td>
<td>220 Heating II</td>
<td>4</td>
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<td>HVAC</td>
<td>221 Introduction to Hydronics</td>
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<tr>
<td>HVAC</td>
<td>230 Refrigeration I</td>
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<td>HVAC</td>
<td>241 Refrigeration II</td>
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<tr>
<td>LAND</td>
<td>133 Home Landscape Maintenance</td>
<td>3</td>
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</tbody>
</table>

LIMITED CHOICE REQUIREMENTS

Total: 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
- Science/Technology Core Area
- Global Perspectives and Diversity Core Area
- Mathematics Competency

Minimum Total: 71

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out which 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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<td>BLDR 101</td>
<td>ELTE 112</td>
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<td>HVAC 130</td>
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<tr>
<td>HVAC 110</td>
<td>HVAC 211</td>
<td>Lim.Ch.</td>
<td>LAND 133</td>
</tr>
</tbody>
</table>

BUILDING MAINTENANCE CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 0237 (Effective Fall 2000–Summer 2005)

This program consists of practical hands-on courses that provide students with the necessary technical knowledge and skills needed for entry-level positions in the maintenance of residential and commercial buildings.

REQUIREMENTS

Total: 37 CREDITS

<table>
<thead>
<tr>
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<tr>
<td>ELTE 112</td>
<td>Basic Wiring Installation</td>
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<tr>
<td>HVAC 100</td>
<td>Fundamentals of HVAC</td>
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</tr>
<tr>
<td>HVAC 105</td>
<td>Sheet Metal Fabrication/Install</td>
<td>2</td>
</tr>
<tr>
<td>HVAC 110</td>
<td>Applied Electricity I</td>
<td>2</td>
</tr>
<tr>
<td>HVAC 111</td>
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<td>HVAC 220</td>
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<td>HVAC 221</td>
<td>Introduction to Hydronics</td>
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<tr>
<td>LAND 133</td>
<td>Home Landscape Maintenance</td>
<td>3</td>
</tr>
</tbody>
</table>

LIMITED CHOICE REQUIREMENTS

Total: 4 CREDITS

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

CHOICE 1: Maintenance Related

- BLDT 121 Residential Framing | 4
- BLDT 126 Interior Carpentry | 4
- HVAC 230 Air Conditioning II | 4
- HVAC 240 Refrigeration I | 4

Minimum Total: 41

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out which 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>ELTE 100</td>
<td>ELTE 112</td>
<td>BLDR 101</td>
<td>BLDR 132</td>
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<tr>
<td>LAND 133</td>
<td>HVAC 211</td>
<td>Lim.Ch.</td>
<td>LAND 133</td>
</tr>
</tbody>
</table>
## BUSINESS ADMINISTRATION
### ASSOCIATE IN BUSINESS DEGREE

**Curriculum Code:** 0243 (Effective Fall 2000–Summer 2005)

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

### GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics. For information on how to fulfill all general education requirements, see page 23.

### INFORMATION

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

### REQUIREMENTS

<table>
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<tr>
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<td>BUSN 118</td>
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<td>BUSN 201</td>
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<td>CRIS 200</td>
<td>Info Sys Tech/Problem Solving</td>
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<td>ECON 201</td>
<td>Principles of Economics-Micro</td>
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<td>Busn Law I, Basic Principles</td>
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<td>MGMT 200</td>
<td>Creative Thinking for Business</td>
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<td>MGMT 225</td>
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<td>Diversity in the Workplace</td>
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<td>WRIT 127</td>
<td>Business Writing</td>
<td>3</td>
</tr>
</tbody>
</table>

**TOTAL:** 41 CREDITS

### LIMITED CHOICE REQUIREMENTS

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

#### CHOICE 1:

**General Education Core Areas**

(See Note 1)

Writing Core Area 0
Speech Communication Core Area 0
Science/Technology Core Area 0
Global Perspectives and Diversity Core Area 0
Mathematics Competency 0

**TOTAL:** 0 Credits

#### CHOICE 2:

**Management Related**

(See Note 2)

5–6 Credits

#### CHOICE 3:

**Marketing Related**

(See Note 3)

5–6 Credits

#### CHOICE 4:

**Computer Related**

(See Note 4)

4–5 Credits

#### CHOICE 5:

**Business Related**

(See Note 5)

ACCT 211 | Principles of Accounting II      | 4            |
BUSN 251 | Stock Market Essentials          | 3            |
ECON 202 | Principles of Economics-Micro     | 3            |
ECON 213 | U.S. Economic/Business History    | 3            |
LABR 200 | Intro to Labor Relations         | 3            |
LABR 204 | Employment Law for Managers      | 3            |
LEGL 216 | Busn Law II, Commercial Law      | 3            |
LEGL 217 | Busn Law III, Busn Organiza       | 3            |

**MINIMUM TOTAL:** 61 Credits

### 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.L.M.E. Series may be used.
3. Choose courses with a MKTG prefix that are not already used to meet degree requirements. BUSN 220 and/or BUSN 250 may also be used.
4. Choose CBS-prefix courses of 110 or above.
5. Students should confer with a Business Careers program advisor to ensure that selection of Limited Choice courses will best fit their career plans.

### SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out what 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>BSN1 118</th>
<th>BUSN 201</th>
<th>ACCG 210</th>
<th>LEGL 215</th>
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</thead>
<tbody>
<tr>
<td>MATH 117</td>
<td>CIBB 200</td>
<td>ECON 201</td>
<td>Lim.Ch.</td>
</tr>
<tr>
<td>SPCH 110</td>
<td>MGMT 204</td>
<td>MGMT 225</td>
<td>Lim.Ch.</td>
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<td>Lim.Ch.</td>
<td>Lim.Ch.</td>
<td>Lim.Ch.</td>
<td>Lim.Ch.</td>
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</table>

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

Curriculum Code: 0240 (Effective Fall 2000–Summer 2005)

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, if 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 consult the Course Descriptions section of this catalog or the Course Schedule for specific course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

#### GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. To fulfill the mathematics competency requirement, students may need to complete specific core courses in mathematics. For information on how to fulfill all general education requirements, see page 23.

#### INFORMATION

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

#### REQUIREMENTS: TOTAL: 34 CREDITS

<table>
<thead>
<tr>
<th>CODE</th>
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<th>CREDIT/HOURS</th>
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<tbody>
<tr>
<td>ACCG 210</td>
<td>Principles of Accounting I</td>
<td>4</td>
</tr>
<tr>
<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>Intro Computer Info Systems</td>
<td>3</td>
</tr>
<tr>
<td>CISB 200</td>
<td>Info Sys Tech/Problem Solving</td>
<td>3</td>
</tr>
<tr>
<td>ECON 201</td>
<td>Principles of Economics-Macro</td>
<td>3</td>
</tr>
<tr>
<td>ECON 202</td>
<td>Principles of Economics-Macro</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 234</td>
<td>Diversity in the Workplace</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 119</td>
<td>Micro/Manage Your Profess Image</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 200</td>
<td>Principles of Marketing</td>
<td>3</td>
</tr>
<tr>
<td>SPCH 110</td>
<td>Oral Comm in the Workplace</td>
<td>3</td>
</tr>
</tbody>
</table>

#### LIMITED CHOICE REQUIREMENTS: TOTAL: 26 CREDITS

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 (See Note 1)</td>
</tr>
<tr>
<td>Science/Technology Core Area (See Note 1)</td>
</tr>
<tr>
<td>Global Perspectives and Diversity Core Area (See Note 1)</td>
</tr>
<tr>
<td>Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)</td>
</tr>
</tbody>
</table>

#### CHOICE 2: Foreign Language (Choose one subchoice)

<table>
<thead>
<tr>
<th>Subchoices 2A</th>
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</thead>
<tbody>
<tr>
<td>FREN 121</td>
</tr>
<tr>
<td>FREN 122</td>
</tr>
<tr>
<td>Subchoices 2B</td>
</tr>
<tr>
<td>GRMN 121</td>
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<td>GRMN 122</td>
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<tr>
<td>Subchoices 2C</td>
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<td>JPN 121</td>
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<tr>
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<td>Subchoices 2D</td>
</tr>
<tr>
<td>SPAN 121</td>
</tr>
<tr>
<td>SPAN 122</td>
</tr>
</tbody>
</table>

#### NOTES

1. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.
2. Students should confer with a Business Careers program advisor to assure that selection of Limited Choice courses will best fit their career plans.

#### SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students with 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.

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>BUSN 118</td>
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<td>ACCG 210</td>
<td>MGMT 234</td>
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<td>CISB 200</td>
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<td>SPCH 110</td>
<td>MKTG 119</td>
<td>ECON 202</td>
<td>Lim.Ch.3</td>
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<td>Lim.Ch.1</td>
<td>MKTG 200</td>
<td>Lim.Ch.2</td>
<td>Lim.Ch.3</td>
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<td>Lim.Ch.3</td>
<td>Lim.Ch.3</td>
<td>Lim.Ch.3</td>
<td>Lim.Ch.3</td>
</tr>
</tbody>
</table>

Students are responsible for completing all requirements as stated. The only official documentation of program completion status is an audit conducted by the Registrar's Office that is initiated when students apply for a degree or certificate. Students are expected to apply one semester prior to the semester they intend to graduate.
CIVIL TECHNOLOGY

ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 0178 (Effective Fall 2000-Summer 2001)

Civil engineering technicians apply theory and principles of civil engineering in planning, designing, and overseeing the construction and maintenance of structures and facilities in the highway system. They may work at construction or survey sites, offices, or in testing labs with engineers, surveyors, supervisors, managers, or skilled trade workers. The successful civil engineering technician must have a working knowledge of college algebra and trigonometry, civil drafting, communications, construction materials, surveying, and must be computer literate. Civil engineering technicians work for construction, engineering, and architecture firms, government agencies, mapping agencies, and private petroleum and mining companies.

PREREQUISITES

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

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics. For information on how to fulfill all general education requirements, see page 20.

INFORMATION

Contact the Technology Careers Department, Gannon Vocational-Technical Center, Room 136, telephone number (517) 483-1506.

REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
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<td>CIVL 101</td>
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<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 136</td>
<td>Hydrology and Highway Tech</td>
<td>5</td>
</tr>
<tr>
<td>CIVL 200</td>
<td>Civil Mathematics</td>
<td>5</td>
</tr>
<tr>
<td>CIVL 241</td>
<td>Statics/Strength of Materials</td>
<td>5</td>
</tr>
<tr>
<td>GRE 203</td>
<td>Beginning MicroStation</td>
<td>3</td>
</tr>
<tr>
<td>MATH 114</td>
<td>Technical Math I</td>
<td>4</td>
</tr>
<tr>
<td>MATH 115</td>
<td>Technical Math II</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 200</td>
<td>Applied Physics</td>
<td>4</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>
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LIMITED CHOICE REQUIREMENTS

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<td>CIVL 120</td>
<td>Surveying</td>
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<tr>
<td>CIVL 124</td>
<td>Route Survey</td>
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</tr>
<tr>
<td>CIVL 131</td>
<td>Traffic Technology</td>
<td>3</td>
</tr>
<tr>
<td>CIVL 132</td>
<td>Construction Materials</td>
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</tr>
<tr>
<td>CIVL 135</td>
<td>Soils Technology</td>
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<tr>
<td>CIVL 136</td>
<td>Hydrology and Highway Tech</td>
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<tr>
<td>CIVL 200</td>
<td>Civil Mathematics</td>
<td>5</td>
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<tr>
<td>CIVL 241</td>
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<td>5</td>
</tr>
<tr>
<td>GRE 203</td>
<td>Beginning MicroStation</td>
<td>3</td>
</tr>
<tr>
<td>MATH 114</td>
<td>Technical Math I</td>
<td>4</td>
</tr>
<tr>
<td>MATH 115</td>
<td>Technical Math II</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 200</td>
<td>Applied Physics</td>
<td>4</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>

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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>CIVL 120</td>
<td>CIVL 101</td>
<td>GRE 203</td>
<td>CIVL 132</td>
</tr>
<tr>
<td>MATH 114</td>
<td>CIVL 124</td>
<td>MATH 115</td>
<td>CIVL 136</td>
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<tr>
<td>SPCH 120</td>
<td>CIVL 131</td>
<td>PHYS 290</td>
<td>CIVL 241</td>
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<td>Lim. Ch.</td>
<td>CIVL 135</td>
<td>SOCL 120</td>
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<tr>
<td>Lim. Ch.</td>
<td>CIVL 200</td>
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</table>
CAD/CAM TECHNICIAN
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 0892 (Effective Fall 2000–Summer 2005)

This curriculum is intended for students planning to pursue a career in mechanical computer-aided design and manufacturing (CAD/CAM). Graduates often seek employment with companies who expect their CAD operators to also be computer numerically controlled (CNC) machine tool path programmers as well as designers. The increase in the level of sophistication of computer-aided design systems has necessitated that the designer assist in the creation of the tool path or support machinists engaged in this task. Responsibilities include graphically representing engineering math data and generating the necessary instructions for computer-controlled lathes, mills, and automated machine tools, both manually and electronically. CAD/CAM technicians are employed by manufacturing companies, machine shops, and die design and construction shops in many areas of the automotive, aerospace, and special machinery manufacturing market. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

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

GENERAL EDUCATION
General education is an important part of this program and includes a mathematics competency requirement. To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics. For information on how to fulfill all general education requirements, see page 23.

INFORMATION
Contact the Technology Careers Department, Barnett Vocational Technical Center, Room 136, telephone number (517) 483-1398.

REQUIRED COURSES

<table>
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<tr>
<th>CODE</th>
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<tbody>
<tr>
<td>CENC 110</td>
<td>Foundations of CEN Programming</td>
</tr>
<tr>
<td>CENC 130</td>
<td>Machine Controls and Setup</td>
</tr>
<tr>
<td>CENC 210</td>
<td>Mastercam</td>
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<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>Drafting III</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 105</td>
<td>Machine Tool Survey</td>
</tr>
<tr>
<td>MACH 110</td>
<td>Machine Tool Technology I</td>
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<tr>
<td>MACH 111</td>
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<tr>
<td>MATH 141</td>
<td>Calculus with Applications</td>
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</table>

TOTAL: 44 CREDITS

LIMITED CHOICE REQUIREMENTS

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

CHOICE 1: General Education Core Areas 12 Credits

<table>
<thead>
<tr>
<th>CODE</th>
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<tbody>
<tr>
<td>WRIT</td>
<td>Writing Core Area</td>
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<td>SPECO</td>
<td>Speech Communication Core Area</td>
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<tr>
<td>SCIENG</td>
<td>Science/Technology Core Area</td>
</tr>
<tr>
<td>GLOPERS</td>
<td>Global Perspectives and Diversity Core Area</td>
</tr>
<tr>
<td>MATHCOMP</td>
<td>Mathematics Competency (See page 23 for Information on how to fulfill this requirement. Course work may be needed.)</td>
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TOTAL: 28 CREDITS

CHOICE 2: Physics 4 Credits

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<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
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<tr>
<td>PHYS 200</td>
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</tr>
<tr>
<td>PHYS 201</td>
<td>Introductory Physics I</td>
</tr>
</tbody>
</table>

CHOICE 3: Computer Graphics (Choose one subchoice. See Note 1) 12 Credits

Subchoice 3A

<table>
<thead>
<tr>
<th>CODE</th>
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</thead>
<tbody>
<tr>
<td>DTDS 131</td>
<td>AutoCAD Basic 2-D</td>
</tr>
<tr>
<td>DTDS 132</td>
<td>AutoCAD Advanced 3-D</td>
</tr>
<tr>
<td>DTDS 233</td>
<td>AutoCAD Mechanical Desktop</td>
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Subchoice 3B

<table>
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<tbody>
<tr>
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<tr>
<td>DTDS 181</td>
<td>Unigraphics II</td>
</tr>
<tr>
<td>DTDS 182</td>
<td>Unigraphics III</td>
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</table>

MINIMUM TOTAL 72

NOTES

1. The Computer Graphics series (Choice 3, 12 credits) may be replaced by another approved computer graphics software package available through the Drafting and Design Program. See a Drafting and Design program advisor for more information.

2. Some prerequisites to courses may be waived based on experience. See an advisor for more information.

SUGGESTED COURSE SEQUENCE

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

<table>
<thead>
<tr>
<th>CODE</th>
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<td>DTDS 101</td>
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<td>Lim.Ch.3</td>
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LANSING COMMUNITY COLLEGE CATALOG 2000–2001 79
**COMPUTER-AIDED DRAFTING/DESIGN ASSOCIATE IN APPLIED SCIENCE DEGREE**

Curriculum Code: 0163 (Effective Fall 2000–Summer 2005)

This program prepares individuals to apply technical knowledge and skills to plan and prepare scale pictorial interpretations of engineering and design concepts. Students receive instruction in the use of precision drawing instruments, computer-assisted design programs, sketching and illustration, and specification interpretation. Proficiency in the use of current computer-aided design packages, up-to-date geometric tolerancing techniques, and descriptive geometry applications is necessary to succeed in the industrial workplace. Employment possibilities include engineering firms, consulting firms, the automotive industry, manufacturers of special machinery, tool and die industry, etc.

**PREREQUISITES**

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

**GENERAL EDUCATION**

General education is an important part of this program and includes a mathematics competency requirement. To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics. For information on how to fulfill all general education requirements, see page 23.

**INFORMATION**

Contact the Technology Careers Department, Gannon Vocational-Technical Center, Room 136, telephone number (617) 483-1336.

**REQUIREMENTS TOTAL: 41 CREDITS**

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</tr>
<tr>
<td>DTDS 103</td>
<td>4</td>
</tr>
<tr>
<td>MACH 100</td>
<td>4</td>
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<tr>
<td>MATH 115</td>
<td>4</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)**

12 Credits

<table>
<thead>
<tr>
<th>Course Area</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Writing</td>
<td>Area</td>
<td>3</td>
</tr>
<tr>
<td>Speech</td>
<td>Area</td>
<td>3</td>
</tr>
<tr>
<td>Science</td>
<td>Area</td>
<td>3</td>
</tr>
<tr>
<td>Global</td>
<td>Area</td>
<td>3</td>
</tr>
<tr>
<td>Diversity</td>
<td>Area</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics</td>
<td>Competency</td>
<td>3</td>
</tr>
</tbody>
</table>

**CHOICE 2: Computer Graphics (Choose one subchoice. See Note 2) 12 Credits**

<table>
<thead>
<tr>
<th>Subchoice</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>2A</td>
<td>AutoCAD Basic 2-D</td>
<td>4</td>
</tr>
<tr>
<td>2D</td>
<td>AutoCAD Advanced 3-D</td>
<td>4</td>
</tr>
<tr>
<td>2E</td>
<td>AutoCAD Mechanical Desktop</td>
<td>4</td>
</tr>
<tr>
<td>2B</td>
<td>Unigraphics I</td>
<td>4</td>
</tr>
<tr>
<td>2C</td>
<td>Unigraphics II</td>
<td>4</td>
</tr>
<tr>
<td>2D</td>
<td>Unigraphics III</td>
<td>4</td>
</tr>
</tbody>
</table>

**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.

<table>
<thead>
<tr>
<th>I</th>
<th>II</th>
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<th>IV</th>
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</thead>
<tbody>
<tr>
<td>DTDS 101</td>
<td>DTDS 102</td>
<td>CNEP 105</td>
<td>DTDS 204</td>
</tr>
<tr>
<td>DTDS 103</td>
<td>DTDS 104</td>
<td>DTDS 202</td>
<td>MACH 135</td>
</tr>
<tr>
<td>MACH 100</td>
<td>MATH 115</td>
<td>Lim.Ch. 1</td>
<td>Lim.Ch. 1</td>
</tr>
<tr>
<td>MATH 114</td>
<td>Lim.Ch. 1</td>
<td>Lim.Ch. 1</td>
<td>Lim.Ch. 2</td>
</tr>
</tbody>
</table>

**COMPUTER-AIDED DRAFTING/DESIGN CERTIFICATE OF ACHIEVEMENT**

Curriculum Code: 0145 (Effective Fall 2000–Summer 2005)

This curriculum has been identified by local industry as comprising the minimal requirements needed for employment consideration. Students completing this curriculum are eligible to apply for entry-level drafting or computer-aided designer (CAD) positions.

**REQUIREMENTS TOTAL: 22 CREDITS**

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>DTDS 101</td>
<td>Drafting I</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>
</tr>
<tr>
<td>DTDS 104</td>
<td>Descriptive Geometry</td>
<td>4</td>
</tr>
<tr>
<td>MACH 100</td>
<td>Manufacturing Processes</td>
<td>4</td>
</tr>
<tr>
<td>MATH 114</td>
<td>Technical Math I</td>
<td>4</td>
</tr>
<tr>
<td>MATH 115</td>
<td>Technical Math II</td>
<td>4</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 (Choose one subchoice. See Note 1) 12 Credits**

<table>
<thead>
<tr>
<th>Subchoice</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1A</td>
<td>AutoCAD Basic 2-D</td>
<td>4</td>
</tr>
<tr>
<td>1B</td>
<td>AutoCAD Advanced 3-D</td>
<td>4</td>
</tr>
<tr>
<td>1C</td>
<td>AutoCAD Mechanical Desktop</td>
<td>4</td>
</tr>
<tr>
<td>1D</td>
<td>Unigraphics I</td>
<td>4</td>
</tr>
<tr>
<td>1E</td>
<td>Unigraphics II</td>
<td>4</td>
</tr>
<tr>
<td>1F</td>
<td>Unigraphics III</td>
<td>4</td>
</tr>
</tbody>
</table>

**MINIMUM TOTAL** 34

**NOTE**

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 program advisor for more information.

**SUGGESTED COURSE SEQUENCE**

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

<table>
<thead>
<tr>
<th>I</th>
<th>II</th>
<th>III</th>
</tr>
</thead>
<tbody>
<tr>
<td>DTDS 101</td>
<td>DTDS 102</td>
<td>Lim.Ch.</td>
</tr>
<tr>
<td>MACH 100</td>
<td>DTDS 103</td>
<td>Lim.Ch.</td>
</tr>
<tr>
<td>MATH 114</td>
<td>DTDS 104</td>
<td>Lim.Ch.</td>
</tr>
</tbody>
</table>
COMPUTER NETWORK/COMMUNICATION
ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 0791 (Effective Fall 2000--Summer 2005)

Computer networking and communication specialists plan, develop, and administer network and communication systems. They may develop applications to be deployed and oversee the operation of the network. They may provide software and hardware support for the networking infrastructure including database development. They will work with Internet and World Wide Web connections including the development of home pages and e-mail.

PREREQUISITES

Students should see the Course Descriptions section of this catalog or the Course Schedule for course prerequisite information. Basic skills assessment and advising information may be found on page 20 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. To fulfill the mathematics competency requirement, students must complete specific course work in mathematics. For information on how to fulfill all general education requirements, see page 23.

INFORMATION

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

REQUIREMENTS

<table>
<thead>
<tr>
<th>COURSE</th>
<th>CREDIT HOURS</th>
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<tbody>
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<td>2</td>
</tr>
<tr>
<td>CISB 100</td>
<td>3</td>
</tr>
<tr>
<td>CISB 102</td>
<td>3</td>
</tr>
<tr>
<td>CISB 119</td>
<td>4</td>
</tr>
<tr>
<td>CISB 130</td>
<td>3</td>
</tr>
<tr>
<td>CISB 133</td>
<td>3</td>
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<tr>
<td>CISB 200</td>
<td>3</td>
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<td>CISB 204</td>
<td>3</td>
</tr>
<tr>
<td>CISB 220</td>
<td>3</td>
</tr>
<tr>
<td>CISB 231</td>
<td>3</td>
</tr>
<tr>
<td>CISB 233</td>
<td>3</td>
</tr>
<tr>
<td>CISB 253</td>
<td>4</td>
</tr>
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<td>CISB 259</td>
<td>3</td>
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TOTAL: 40 CREDITS

LIMITED CHOICE REQUIREMENTS

<table>
<thead>
<tr>
<th>COURSE</th>
<th>CREDIT HOURS</th>
</tr>
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<tbody>
<tr>
<td>CABS 195</td>
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<td>CISB 200</td>
<td>3</td>
</tr>
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<td>CISB 231</td>
<td>3</td>
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<td>CISB 233</td>
<td>3</td>
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<td>CISB 259</td>
<td>3</td>
</tr>
</tbody>
</table>

TOTAL: 20 CREDITS

Students are responsible for completing all requirements as stated. The only official documentation of program completion status is an audit conducted by the Registrar's office that is initiated when students apply for a degree or certificate. Students are expected to apply one semester prior to the semester they intend to graduate.

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>SEMESTER</th>
<th>COURSE</th>
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<tbody>
<tr>
<td>I</td>
<td>IV</td>
</tr>
<tr>
<td>II</td>
<td>III</td>
</tr>
<tr>
<td>CABS 195</td>
<td>CISB 130</td>
</tr>
<tr>
<td>CISB 100</td>
<td>CISB 133</td>
</tr>
<tr>
<td>CISB 102</td>
<td>CISB 204</td>
</tr>
<tr>
<td>CISB 119</td>
<td>Lim.Ch.1</td>
</tr>
<tr>
<td>Lim.Ch.2</td>
<td>Lim.Ch.3</td>
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</tbody>
</table>

MINIMUM TOTAL: 60
**COMPUTER REPAIR TECHNICIAN**
**CERTIFICATE OF ACHIEVEMENT**

Curriculum Code: 0168 (Effective Fall 2000–Summer 2005)

This program provides technical knowledge and skills to repair and service computers, test computers and computer components, and diagnose causes of malfunctions. Individuals are prepared for entry-level positions.

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

**INFORMATION**
Contact the Technology Careers Department, Gannon Vocational-Technical Center, Room 136, telephone number (517) 483-1336.

**REQUIREMENTS**

<table>
<thead>
<tr>
<th>CODE</th>
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<tr>
<td>ELCT 100</td>
<td>Schematic Drawing</td>
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<tr>
<td>ELCT 181</td>
<td>Computer Troubleshooting</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ELCT 190</td>
<td>Logic Problem Analysis</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ELCT 161</td>
<td>Soldering/Desoldering</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>ELCT 176</td>
<td>Computer Repair Electronics I</td>
<td>6</td>
<td></td>
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<tr>
<td>ELCT 171</td>
<td>Computer Repair Electronics II</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>ELCT 160</td>
<td>Computer Test Equipment I</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ELCT 181</td>
<td>Computer Test Equipment II</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

**LIMITED CHOICE REQUIREMENTS**

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

**CHOICE 1:**
- CABS 195 Microsoft Windows 2 credits
- CISB 107 DOS Management 1 credit
- CISB 130 Operating Systems 3 credits
- CISB 230 Intro to Local Area Networks 3 credits
- ELCT 120 Programming Preparation 2 credits

**CHOICE 2:**
- SPCH 110 Oral Communication in the Workplace 3 credits
- WRIT 117 Writing Preparation II 4 credits
- WRIT 124 Technical Writing 3 credits

**MINIMUM TOTAL**

31 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>
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<td>ELCT 151</td>
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<td>ELCT 171</td>
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<td>ELCT 180</td>
<td>ELCT 181</td>
</tr>
<tr>
<td>ELCT 170</td>
<td>Lim.Ch.</td>
</tr>
<tr>
<td>ELCT 180</td>
<td>Lim.Ch.</td>
</tr>
</tbody>
</table>

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

Curriculum Code: 023 (Effective Fall 2000–Summer 2005)

Computer auditors plan and conduct audits of data processing systems and applications to safeguard assets, ensure accuracy of data, and promote operational efficiency. They may interview workers and examine records to gather data by following an audit plan and using the computer. They analyze data gathered to evaluate effectiveness of controls and determine accuracy of reports and efficiency and security of operations. They devise, write, and test computer programs necessary to obtain information needed for audit. They devise controls for new or modified computer applications to prevent inaccurate calculations and data loss and to ensure discovery of errors.

PREREQUISITES

Students should see the Course Descriptions section of this catalog or the Course Schedule for course prerequisite information. Basic skills assessment and advising information may be found on page 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, students may need to complete specific coursework in mathematics. For information on how to fulfill all general education requirements, see page 23.

INFORMATION

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

REQUIREMENTS

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<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 290</td>
<td>Auditing</td>
<td>3</td>
</tr>
<tr>
<td>CISB 100</td>
<td>Intro Computer Info Systems</td>
<td>3</td>
</tr>
<tr>
<td>CISB 114</td>
<td>Programming Logic</td>
<td>3</td>
</tr>
<tr>
<td>CISB 130</td>
<td>Data Communications</td>
<td>3</td>
</tr>
<tr>
<td>CISB 133</td>
<td>Operating Systems</td>
<td>3</td>
</tr>
<tr>
<td>CISB 156</td>
<td>SQL: Structured Query Language</td>
<td>2</td>
</tr>
<tr>
<td>CISB 170</td>
<td>COBOL I</td>
<td>4</td>
</tr>
<tr>
<td>CISB 230</td>
<td>Intro to Local Area Networks</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>
</tr>
<tr>
<td>CISB 270</td>
<td>COBOL II</td>
<td>3</td>
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</table>

TOTAL: 50 CREDITS

LIMITED CHOICE REQUIREMENTS

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<thead>
<tr>
<th>Course</th>
<th>Title</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>
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</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 290</td>
<td>Auditing</td>
<td>3</td>
</tr>
<tr>
<td>CISB 100</td>
<td>Intro Computer Info Systems</td>
<td>3</td>
</tr>
<tr>
<td>CISB 114</td>
<td>Programming Logic</td>
<td>3</td>
</tr>
<tr>
<td>CISB 130</td>
<td>Data Communications</td>
<td>3</td>
</tr>
<tr>
<td>CISB 133</td>
<td>Operating Systems</td>
<td>3</td>
</tr>
<tr>
<td>CISB 156</td>
<td>SQL: Structured Query Language</td>
<td>2</td>
</tr>
<tr>
<td>CISB 170</td>
<td>COBOL I</td>
<td>4</td>
</tr>
<tr>
<td>CISB 230</td>
<td>Intro to Local Area Networks</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>
</tr>
<tr>
<td>CISB 270</td>
<td>COBOL II</td>
<td>3</td>
</tr>
</tbody>
</table>

TOTAL: 12 CREDITS

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

CHOICE 1: General Education Core Areas

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

Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)

MINIMUM TOTAL: 62

NOTE

1. For graduation, a student must have earned a minimum 2.0 grade point average in courses with a CISB and ACGG prefix.

Students are responsible for completing all requirements as stated. The only official documentation of program completion status is an audit conducted by the Registrar's Office that is initiated when students apply for a degree or certificate. Students are expected to apply one semester prior to the semester they intend to graduate.
### ELECTRONICS, COMPUTER TECH ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 0743 (Effective Fall 2000–Summer 2005)

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 also diagnose and repair the system when it fails, make upgrades and perform preventative maintenance. A computer service technician also answers customers' questions relating to correct use of computers or components and may install new equipment. A successful computer service technician must understand electronics, computer hardware and software, and how they work together to make the computer operate. Computer service technicians are employed in computer sales and service shops and any place a large number of computers are found. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

#### PREREQUISITES

Students should see the Course Descriptions section of this catalog or the Course Schedule for 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, students may need to complete specific course work in mathematics. For information on how to fulfill all general education requirements, see page 23.

#### INFORMATION

Contact the Technology Careers Department, Gannon Vocational-Technical Center, Room 136, telephone number (517) 483-1336.

#### REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
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<tbody>
<tr>
<td>CABS 133</td>
<td>Microsoft Access Database</td>
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<tr>
<td>CABS 195</td>
<td>Microsoft Windows</td>
<td>2</td>
</tr>
<tr>
<td>CISB 107</td>
<td>DOS Management</td>
<td>1</td>
</tr>
<tr>
<td>CISB 114</td>
<td>Programming Logic</td>
<td>3</td>
</tr>
<tr>
<td>CISB 130</td>
<td>Data Communications</td>
<td>3</td>
</tr>
<tr>
<td>CISB 133</td>
<td>Operating Systems</td>
<td>3</td>
</tr>
<tr>
<td>CISB 200</td>
<td>Info Sys Tech/Problem Solving</td>
<td>3</td>
</tr>
<tr>
<td>CISB 230</td>
<td>Intro to Local Area Networks</td>
<td>3</td>
</tr>
<tr>
<td>CISB 231</td>
<td>Advanced Local Area Networks</td>
<td>3</td>
</tr>
<tr>
<td>CISB 236</td>
<td>Microcomputer Software Support</td>
<td>3</td>
</tr>
<tr>
<td>ELEC 100</td>
<td>Schematic Drawing</td>
<td>1</td>
</tr>
<tr>
<td>ELEC 120</td>
<td>Programming Preparation</td>
<td>2</td>
</tr>
<tr>
<td>ELEC 151</td>
<td>Computer Troubleshooting</td>
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<td>ELEC 160</td>
<td>Logic Problems Analysis</td>
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<tr>
<td>ELEC 161</td>
<td>Soldering/Desoldering</td>
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<td>Computer Repair Electronics I</td>
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<tr>
<td>ELEC 181</td>
<td>Computer Test Equipment II</td>
<td>2</td>
</tr>
<tr>
<td>SPCH 110</td>
<td>Oral Communication in the Workplace</td>
<td>3</td>
</tr>
<tr>
<td>WHT 124</td>
<td>Technical Writing</td>
<td>3</td>
</tr>
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</table>

#### LIMITED CHOICE REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>TOTAL: 7 CREDITS</th>
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</thead>
<tbody>
<tr>
<td>CABS 119</td>
<td>Word Processing</td>
<td>2</td>
</tr>
<tr>
<td>CABS 121</td>
<td>WordPerfect for Windows</td>
<td>2</td>
</tr>
</tbody>
</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.

<table>
<thead>
<tr>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELCT 100</td>
<td>CISB 114</td>
<td>CABS 195</td>
<td>CABS 133</td>
</tr>
<tr>
<td>ELCT 120</td>
<td>CISB 130</td>
<td>CISB 107</td>
<td>CISB 133</td>
</tr>
<tr>
<td>ELCT 160</td>
<td>ELCT 151</td>
<td>CISB 200</td>
<td>CISB 231</td>
</tr>
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<td>ELCT 161</td>
<td>ELCT 171</td>
<td>CISB 230</td>
<td>CISB 236</td>
</tr>
<tr>
<td>ELCT 170</td>
<td>ELCT 181</td>
<td>WRIT 124</td>
<td>Lim.Ch.</td>
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<tr>
<td>ELCT 180</td>
<td>Lim.Ch.</td>
<td>Lim.Ch.</td>
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</tr>
<tr>
<td>SPCH 110</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

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

Curriculum Code: 0794 (Effective Fall 2000–Summer 2005)

This program provides students with technical knowledge and skills to use the Internet, the global network which links computer users and information on a world-wide scale. Students will learn how to maximize the use of Internet and World Wide Web resources. Emphasis in this program is on business applications.

**PREREQUISITES**

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

### INFORMATION

Contact the Business Careers Department, Old Central Building, Room 210, telephone number (517) 463-1522.

### REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CABS 195</td>
<td>Microsoft Windows</td>
<td>2</td>
</tr>
<tr>
<td>CISB 100</td>
<td>Intro Computer Info Systems</td>
<td>3</td>
</tr>
<tr>
<td>CISB 102</td>
<td>Internet Literacy</td>
<td>3</td>
</tr>
<tr>
<td>CISB 119</td>
<td>Intro Windows Prog Visual BASIC</td>
<td>4</td>
</tr>
<tr>
<td>CISB 120</td>
<td>Data Communications</td>
<td>3</td>
</tr>
<tr>
<td>CISB 204</td>
<td>Commercial Internt Site Mgmt</td>
<td>3</td>
</tr>
<tr>
<td>CISB 258</td>
<td>Developing Pages for the Web</td>
<td>3</td>
</tr>
<tr>
<td>WRIT 121</td>
<td>Composition I</td>
<td>4</td>
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</table>

**TOTAL: 25 CREDITS**

### LIMITED CHOICE REQUIREMENTS

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

**CHOICE 1:** Programming  
CISB 253 | WWW Interactive Programming | 4  
CISB 283 | Intro to JAVA Programming   | 3

**TOTAL: 6–7 CREDITS**

**CHOICE 2:** Speech Communication  
SPCH 110 | Oral Commucnic in the Workplace | 3  
SPCH 120 | Dynamics of Communication    | 3

**MINIMUM TOTAL**  
31

**NOTE**

1. For graduation from this program, a student must have earned a minimum 2.0 grade in each course with CABS and CISB prefixes.

**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>
</tr>
</thead>
<tbody>
<tr>
<td>CABS 195</td>
<td>CISB 130</td>
<td>CABS 204</td>
</tr>
<tr>
<td>CISB 100</td>
<td>CISB 269</td>
<td>WRIT 121</td>
</tr>
<tr>
<td>CISB 102</td>
<td>Lim.Ch.</td>
<td>Lim.Ch.</td>
</tr>
<tr>
<td>CISB 119</td>
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</tr>
</tbody>
</table>

Students are responsible for completing all requirements as stated. The only official documentation of program completion status is an audit conducted by the Registrar's Office that is initiated when students apply for a degree or certificate. Students are expected to apply one semester prior to the semester they intend to graduate.
## MICROCOMP DATABASE SPECIALIST ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 0922 (Effective Fall 2000–Summer 2005)

As the Information Age matures, decisions at all levels of an organization are based upon relevant information. Organizations seek specialists who can plan for and accomplish the acquisition and retrieval of needed information. These specialists must be able to determine information requirements of users, use technology systems and processes to devise means through which to gather and sort needed information, and implement effective solutions for reporting necessary information using industry-standard database tools. Even in large organizations, these solutions frequently involve the use of microcomputers to create the required input screens or output reports. Data for these systems can come from a networked and/or stand-alone environment. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

### PREREQUISITES

Students should see the Course Descriptions section of this catalog or the Course Schedule for course prerequisite information. Basic skills assessment and advising information may be found on page 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, students may need to complete specific course work in mathematics. For information on how to fulfill all general education requirements, see page 23.

### 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>
<th>TOTAL: 40 CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CABS 133</td>
<td>Microsoft Access Database</td>
<td>2</td>
</tr>
<tr>
<td>CABS 232</td>
<td>Advanced Microsoft Access</td>
<td>2</td>
</tr>
<tr>
<td>CISP 100</td>
<td>Intro Computer Info Systems</td>
<td>3</td>
</tr>
<tr>
<td>CISP 114</td>
<td>Programming Logic</td>
<td>3</td>
</tr>
<tr>
<td>CISP 119</td>
<td>Intro Window Prog Visual BASIC</td>
<td>4</td>
</tr>
<tr>
<td>CISP 122</td>
<td>Adv Windows Prog Visual BASIC</td>
<td>3</td>
</tr>
<tr>
<td>CISP 130</td>
<td>Data Communications</td>
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<tr>
<td>CISP 133</td>
<td>Operating Systems</td>
<td>3</td>
</tr>
<tr>
<td>CISP 136</td>
<td>SQL: Structured Query Language</td>
<td>2</td>
</tr>
<tr>
<td>CISP 143</td>
<td>ORACLE Database for Business</td>
<td>2</td>
</tr>
<tr>
<td>CISP 200</td>
<td>Intro Sys Tech/Problem Solving</td>
<td>3</td>
</tr>
<tr>
<td>CISP 230</td>
<td>Intro to Local Area Networks</td>
<td>3</td>
</tr>
<tr>
<td>CISP 250</td>
<td>Database Concepts</td>
<td>3</td>
</tr>
<tr>
<td>CISP 260</td>
<td>Systems Analysis and Design</td>
<td>4</td>
</tr>
</tbody>
</table>

### LIMITED CHOICE REQUIREMENTS

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

### CHOICE 3: Computer Related

**TOTAL: 20–21 CREDITS**

**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 in all courses.
3. Other CABS or CISP-prefix courses may be approved for Choice 2 by a Computer Information Systems Academic Program advisor.
4. Certificate holders may qualify for entry level/paraprofessional positions in this or a related area. Additional training will enhance individual employment and advancement opportunities.

### REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>TOTAL: 30 CREDITS</th>
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</thead>
<tbody>
<tr>
<td>CABS 133</td>
<td>Microsoft Access Database</td>
<td>2</td>
</tr>
<tr>
<td>CABS 195</td>
<td>Microsoft Windows</td>
<td>2</td>
</tr>
<tr>
<td>CABS 232</td>
<td>Advanced Microsoft Access</td>
<td>2</td>
</tr>
<tr>
<td>CABS 234</td>
<td>Programming Microsoft Access</td>
<td>2</td>
</tr>
<tr>
<td>CISP 100</td>
<td>Intro Computer Info Systems</td>
<td>3</td>
</tr>
<tr>
<td>CISP 114</td>
<td>Programming Logic</td>
<td>3</td>
</tr>
<tr>
<td>CISP 130</td>
<td>Data Communications</td>
<td>3</td>
</tr>
<tr>
<td>CISP 136</td>
<td>SQL: Structured Query Language</td>
<td>2</td>
</tr>
<tr>
<td>CISP 143</td>
<td>ORACLE Database for Business</td>
<td>3</td>
</tr>
<tr>
<td>CISP 200</td>
<td>Info Sys Tech/Problem Solving</td>
<td>3</td>
</tr>
<tr>
<td>CISP 210</td>
<td>Intro to Local Area Networks</td>
<td>3</td>
</tr>
<tr>
<td>CISP 250</td>
<td>Database Concepts</td>
<td>3</td>
</tr>
</tbody>
</table>

**NOTE**

1. For graduation, a student must have earned a minimum 2.0 grade in all courses.

### SUGGESTED COURSE SEQUENCE

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

<table>
<thead>
<tr>
<th>I</th>
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</tr>
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<tbody>
<tr>
<td>CABS 133</td>
<td>CABS 232</td>
</tr>
<tr>
<td>CABS 195</td>
<td>CABS 234</td>
</tr>
<tr>
<td>CISP 100</td>
<td>CISP 143</td>
</tr>
<tr>
<td>CISP 114</td>
<td>CISP 200</td>
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<tr>
<td>CISP 130</td>
<td>CISP 230</td>
</tr>
<tr>
<td>CISP 136</td>
<td>CISP 250</td>
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</table>

**MINIMUM TOTAL**

<table>
<thead>
<tr>
<th>I</th>
<th>II</th>
</tr>
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<tbody>
<tr>
<td>9</td>
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</table>

**TOTAL: 40 CREDITS**
MICROCOMP SUPPORT SPECIALIST
ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 0713 (Effective Fall 2000–Summer 2005)

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 personal in installation of hardware and peripheral components, such as monitors, keyboards, printers, and disk drives on user’s premises, following design or installation specifications. They may also load software packages into the computer; instruct users in use of equipment, software, and manuals; answer clients’ inquiries concerning the systems operation; and diagnose system hardware, software, and operator problems.

PREREQUISITES

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

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics. For information on how to fulfill all general education requirements, see page 23.

INFORMATION

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

REQUIREMENTS

<table>
<thead>
<tr>
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<tr>
<td>CABS 133</td>
<td>Microsoft Access Database</td>
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</tr>
<tr>
<td>CABS 192</td>
<td>Microsoft PowerPoint/Windows</td>
<td>2</td>
</tr>
<tr>
<td>CABS 199</td>
<td>Microsoft Windows</td>
<td>2</td>
</tr>
<tr>
<td>CABS 232</td>
<td>Advanced Microsoft Access</td>
<td>2</td>
</tr>
<tr>
<td>CABS 234</td>
<td>Programming Microsoft Access</td>
<td>2</td>
</tr>
<tr>
<td>CISB 100</td>
<td>Intro Computer Info Systems</td>
<td>3</td>
</tr>
<tr>
<td>CISB 162</td>
<td>Internet Literacy</td>
<td>3</td>
</tr>
<tr>
<td>CISB 119</td>
<td>Intro Windows Prog Visual BASIC</td>
<td>4</td>
</tr>
<tr>
<td>CISB 130</td>
<td>Data Communications</td>
<td>3</td>
</tr>
<tr>
<td>CISB 132</td>
<td>Operating Systems</td>
<td>3</td>
</tr>
<tr>
<td>CISB 200</td>
<td>Intro Sys Tech/Problem Solving</td>
<td>3</td>
</tr>
<tr>
<td>CISB 236</td>
<td>Intro to Local Area Networks</td>
<td>3</td>
</tr>
<tr>
<td>CISB 235</td>
<td>Microcomputer Hardware Support</td>
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<td>CISB 236</td>
<td>Microcomputer Software Support</td>
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</table>

LIMITED CHOICE REQUIREMENTS

<table>
<thead>
<tr>
<th>TOTAL: 22–28 CREDITS</th>
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</table>

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) 0
Global Perspectives and Diversity Core Area 3
Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)

CHOICE 2: Word Processing 4–5 Credits

CABS 119 | Word for Windows | 2
CABS 121 | WordPerfect for Windows | 2
CABS 160 | Desktop Publishing Pagemaker | 3
CABS 219 | Advanced Microsoft Word | 2

CHOICE 3: Spreadsheets 4 Credits

CABS 126 | Excel | 2
CABS 128 | Lotus 1–2–3 for Windows | 2
CABS 129 | Excel-Advanced | 2

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

CISB 231 | Advanced Local Area Networks | 3
CISB 247 | Microcomputer Project | 2
CISB 250 | Database Concepts | 3
CISB 258 | Developing Papers for the Web | 3
CISB 260 | Systems Analysis and Design | 4

NOTES

1. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.
2. Students may also select from any course with a CABS or CISB prefix not already used to meet degree requirements.
3. For graduation, a student must have earned a minimum 2.0 grade in each course with a CABS and CISB prefix.

SUGGESTED COURSE SEQUENCE

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

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<thead>
<tr>
<th>I</th>
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<th>III</th>
<th>IV</th>
</tr>
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<tbody>
<tr>
<td>CABS 182</td>
<td>CABS 133</td>
<td>CABS 232</td>
<td>CISB 230</td>
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<tr>
<td>CABS 185</td>
<td>CISB 162</td>
<td>CABS 234</td>
<td>CISB 235</td>
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<td>CISB 100</td>
<td>CISB 119</td>
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<td>CISB 236</td>
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<tr>
<td>Lim.Ch.</td>
<td>Lim.Ch.</td>
<td>CISB 200</td>
<td>Lim.Ch.</td>
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</table>
PROGRAMMER/ANALYST
ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 0113 (Effective Fall 2000–Summer 2005)

Programmers/Analysts plan, develop, test, and document computer programs at the request of a specific user, applying knowledge of programming techniques and computer systems. They may evaluate user requests to determine feasibility, cost and time required, as well as compatibility with current system and computer capabilities. In addition, they read manuals, periodicals, and technical reports to develop programs that meet user requirements. They formulate a plan outlining steps required to develop programs and convert project specifications into program source instructions which are entered into the computer system and tested. They may write documentation and the user manual.

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

GENERAL EDUCATION
General education is an important part of this program and includes a mathematics competency requirement. To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics. For information on how to fulfill all general education requirements, see page 23.

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

REQUIREMENTS

<table>
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<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
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<tbody>
<tr>
<td>ACGG 210</td>
<td>Principles of Accounting I</td>
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<td>CISB 150</td>
<td>Intro Computer Info Systems</td>
<td>3</td>
</tr>
<tr>
<td>CISB 114</td>
<td>Programming Logic</td>
<td>3</td>
</tr>
<tr>
<td>CISB 130</td>
<td>Data Communications</td>
<td>3</td>
</tr>
<tr>
<td>CISB 153</td>
<td>Operating Systems</td>
<td>3</td>
</tr>
<tr>
<td>CISB 170</td>
<td>COBOL I</td>
<td>4</td>
</tr>
<tr>
<td>CISB 200</td>
<td>Info Sys Tech/Problem Solving</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>
</tr>
<tr>
<td>CISB 270</td>
<td>COBOL II</td>
<td>3</td>
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</table>

TOTAL: 33 CREDITS

LIMITED CHOICE REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
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<tbody>
<tr>
<td>ACGG 210</td>
<td>Principles of Accounting I</td>
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</tr>
<tr>
<td>CISB 150</td>
<td>Intro Computer Info Systems</td>
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<tr>
<td>CISB 114</td>
<td>Programming Logic</td>
<td>3</td>
</tr>
<tr>
<td>CISB 130</td>
<td>Data Communications</td>
<td>3</td>
</tr>
<tr>
<td>CISB 153</td>
<td>Operating Systems</td>
<td>3</td>
</tr>
<tr>
<td>CISB 170</td>
<td>COBOL I</td>
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</tr>
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<td>CISB 200</td>
<td>Info Sys Tech/Problem Solving</td>
<td>3</td>
</tr>
<tr>
<td>CISB 250</td>
<td>Database Concepts</td>
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</tr>
<tr>
<td>CISB 260</td>
<td>Systems Analysis and Design</td>
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</tr>
<tr>
<td>CISB 270</td>
<td>COBOL II</td>
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</tbody>
</table>

TOTAL: 27 CREDITS

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

CHOICE 1: General Education Core Areas 9 Credits
(See the GENERAL EDUCATION section above)
- Writing Core Area
- Speech Communication Core Area
- Science/Technology Core Area (See Note 1)
- Global Perspectives and Diversity Core Area
- Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)

CHOICE 2: Additional Language (Choose one subchoice) 7 Credits

SUBCHOICE 2A
- CISB 119 Intro Window Prog Visual BASIC
- CISB 122 Adv Windows Prog Visual BASIC

SUBCHOICE 2B
- CISB 160 Intro to C/C++ Program for Bus
- CISB 280 Adv C/C++ Prog with OOP

CHOICE 3: Computer Related (See Note 2) 11 Credits

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CABS 110</td>
<td>Microsoft Office</td>
<td>3</td>
</tr>
<tr>
<td>CABS 195</td>
<td>Microsoft Windows</td>
<td>2</td>
</tr>
<tr>
<td>CISB 102</td>
<td>Internet Literacy</td>
<td>3</td>
</tr>
<tr>
<td>CISB 136</td>
<td>SQL: Structured Query Language</td>
<td>2</td>
</tr>
<tr>
<td>CISB 141</td>
<td>Powerbuilder</td>
<td>3</td>
</tr>
<tr>
<td>CISB 143</td>
<td>ORACLE Database for Business</td>
<td>2</td>
</tr>
<tr>
<td>CISB 230</td>
<td>Intro to Local Area Networks</td>
<td>3</td>
</tr>
<tr>
<td>CISB 245</td>
<td>Programming Internship</td>
<td>3</td>
</tr>
<tr>
<td>CISB 253</td>
<td>WWW Interactive Programming</td>
<td>3</td>
</tr>
<tr>
<td>CISB 263</td>
<td>Intro to JAVA Programming</td>
<td>3</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL: 50

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 in each course with a CABS or CISB prefix.

SUGGESTED COURSE SEQUENCE

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

<table>
<thead>
<tr>
<th></th>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGG 210</td>
<td>CISB 130</td>
<td>CISB 170</td>
<td>CISB 270</td>
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<tr>
<td>CISB 100</td>
<td>CISB 122</td>
<td>CISB 200</td>
<td>Lim.Ch.1</td>
<td></td>
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<tr>
<td>CISB 114</td>
<td>CISB 250</td>
<td>CISB 260</td>
<td>Lim.Ch.3</td>
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</tr>
<tr>
<td>Lim.Ch.1</td>
<td>Lim.Ch.1</td>
<td>Lim.Ch.2</td>
<td>Lim.Ch.3</td>
<td></td>
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<tr>
<td></td>
<td>Lim.Ch.2</td>
<td>Lim.Ch.3</td>
<td>Lim.Ch.3</td>
<td></td>
</tr>
</tbody>
</table>
ADV PC APPLICATION SPECIALIST
CERTIFICATE OF COMPLETION

Curriculum Code: 0765 (Effective Fall 2000–Summer 2005)

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

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

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CABS 119</td>
<td>Word for Windows</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>CABS 120</td>
<td>Excel</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>CABS 123</td>
<td>Excel-Advanced</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>CABS 133</td>
<td>Microsoft Access Database</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>CABS 182</td>
<td>Microsoft PowerPoint/Windows</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>CABS 195</td>
<td>Microsoft Windows</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>CABS 219</td>
<td>Advanced Microsoft Word</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>CABS 232</td>
<td>Advanced Microsoft Access</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>CABS 234</td>
<td>Programming Microsoft Access</td>
<td>2</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL: 18 CREDITS

NOTE
1. A minimum 2.0 grade is each course with a CABS or CISB prefix is required.

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

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CABS 119</td>
<td>CABS 120</td>
<td>CABS 123</td>
</tr>
<tr>
<td></td>
<td>CABS 128</td>
<td>CABS 133</td>
<td>CABS 219</td>
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<tr>
<td></td>
<td>CABS 195</td>
<td>CABS 232</td>
<td>CABS 234</td>
</tr>
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</table>

PC USER SUPPORT SPECIALIST
CERTIFICATE OF COMPLETION

Curriculum Code: 0766 (Effective Fall 2000–Summer 2005)

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

INFORMATION
Contact the Business Careers Department, Old Central Building, Room 216, telephone number (517) 483-1522.

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>CODE</th>
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<th>CREDIT HOURS</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>CABS 195</td>
<td>Microsoft Windows</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>CISB 200</td>
<td>Info Sys Tech/Problem Solving</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>CISB 230</td>
<td>Intro to Local Area Networks</td>
<td>3</td>
</tr>
</tbody>
</table>

TOTAL: 17 CREDITS

NOTE
1. A minimum 2.0 grade is each course with a CABS or CISB prefix is required.

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

<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>CISB 122</td>
<td>CISB 281</td>
</tr>
<tr>
<td></td>
<td>CISB 119</td>
<td>Lim. Ch.</td>
<td>CISB 281</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL: 15 CREDITS

WINDOWS PROGRAMMING SPECIALIST
CERTIFICATE OF COMPLETION

Curriculum Code: 0753 (Effective Fall 2000–Summer 2005)

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

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

<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 119</td>
<td>Intro Win Prog Visual BASIC</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>CISB 122</td>
<td>Adv Windows Prog 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>

TOTAL: 12 CREDITS

LIMITED CHOICE REQUIREMENTS

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

<table>
<thead>
<tr>
<th>CHOICE 1</th>
<th>TITLE</th>
<th>CREDIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Multimedia</td>
<td>3-4 Credits</td>
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</table>

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>CISB 253</td>
<td>WWW Interactive Programming</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>CISB 258</td>
<td>Developing Pages for the Web</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>CISB 283</td>
<td>Intro to JAVA Programming</td>
<td>3</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL: 15 CREDITS

NOTE
1. A minimum 2.0 grade in each course with a CABS or CISB prefix is required.

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

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CABS 195</td>
<td>CISB 122</td>
<td>CISB 281</td>
</tr>
<tr>
<td></td>
<td>CISB 119</td>
<td>Lim. Ch.</td>
<td>CISB 281</td>
</tr>
</tbody>
</table>
RESIDENTIAL BUILDING
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 0167 (Effective Fall 2000–Summer 2005)

This program prepares an individual to build single family structures and multiple housing buildings such as apartments and condominiums. A residential builder must have basic math skills, understand construction methods and techniques, and know the proper use of construction materials. They must also have significant knowledge of blueprint reading, estimating, code requirements, and small business administration and management. Students will be prepared to obtain a Residential Builder’s License or a Maintenance and Alteration Contractor’s License. This program also assists students in preparing for the Michigan Builder’s License Exam which is administered by the National Assessment Institute and the State of Michigan. This program does not lead to journeyman status.

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

GENERAL EDUCATION
General education is an important part of this program and includes a mathematics competency requirement. To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics. For information on how to fulfill all general education requirements, see page 23.

INFORMATION
Contact the Technology Careers Department, Garmon Vocational-Technical Center, Room 136, telephone number (517) 483-1336.

REQUIREMENTS

<table>
<thead>
<tr>
<th>COURSE CODE</th>
<th>COURSE TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH 271</td>
<td>Structural Theory</td>
<td>4</td>
</tr>
<tr>
<td>ARCH 278</td>
<td>Energy Efficient Design</td>
<td>4</td>
</tr>
<tr>
<td>BLDT 100</td>
<td>Introduction to Construction</td>
<td>3</td>
</tr>
<tr>
<td>BLDT 103</td>
<td>Structural Blueprint Reading</td>
<td>4</td>
</tr>
<tr>
<td>BLDT 121</td>
<td>Residential Framing</td>
<td>4</td>
</tr>
<tr>
<td>BLDT 124</td>
<td>Remodeling, Siding/Sliding</td>
<td>4</td>
</tr>
<tr>
<td>BLDT 126</td>
<td>Interior Carpentry</td>
<td>4</td>
</tr>
<tr>
<td>BLDT 262</td>
<td>Builder’s Business License</td>
<td>4</td>
</tr>
<tr>
<td>BLDT 277</td>
<td>Construction Cost Estimating</td>
<td>4</td>
</tr>
<tr>
<td>BLDT 281</td>
<td>International Code</td>
<td>3</td>
</tr>
<tr>
<td>MATH 114</td>
<td>Technical Math I</td>
<td>4</td>
</tr>
<tr>
<td>MATH 115</td>
<td>Technical Math II</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 12 Credits

<table>
<thead>
<tr>
<th>COURSE CODE</th>
<th>COURSE TITLE</th>
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</thead>
<tbody>
<tr>
<td>Writing Core Area</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Speech Communication Core Area</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Science/Technology Core Area</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Global Perspectives and Diversity Core Area</td>
<td>3</td>
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</tbody>
</table>

CHOICE 2: Building/Construction Related 6 Credits

<table>
<thead>
<tr>
<th>COURSE CODE</th>
<th>COURSE TITLE</th>
<th>CREDIT HOURS</th>
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</thead>
<tbody>
<tr>
<td>ACCG 100</td>
<td>Practical Accounting Non-Major</td>
<td>3</td>
</tr>
<tr>
<td>ARCH 283</td>
<td>Materials of Construction</td>
<td>4</td>
</tr>
<tr>
<td>BLDT 101</td>
<td>Basic Woodworking</td>
<td>2</td>
</tr>
<tr>
<td>BLDT 285</td>
<td>Residential Building Intern</td>
<td>2</td>
</tr>
<tr>
<td>BUSN 118</td>
<td>Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>CIVL 120</td>
<td>Surveying</td>
<td>4</td>
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</tbody>
</table>

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 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>COURSE TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>BLDT 100</td>
<td>Introduction to Construction</td>
<td>3</td>
</tr>
<tr>
<td>BLDT 103</td>
<td>Structural Blueprint Reading</td>
<td>4</td>
</tr>
<tr>
<td>BLDT 121</td>
<td>Residential Framing</td>
<td>4</td>
</tr>
<tr>
<td>BLDT 124</td>
<td>Remodeling, Siding/Sliding</td>
<td>4</td>
</tr>
<tr>
<td>BLDT 126</td>
<td>Interior Carpentry</td>
<td>4</td>
</tr>
<tr>
<td>BLDT 277</td>
<td>Construction Cost Estimating</td>
<td>4</td>
</tr>
<tr>
<td>BLDT 281</td>
<td>International Code</td>
<td>3</td>
</tr>
<tr>
<td>MATH 050</td>
<td>Math-Principles and Practices</td>
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</table>

MINIMUM TOTAL 30

SUGGESTED COURSE SEQUENCE

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

<table>
<thead>
<tr>
<th>COURSE CODE</th>
<th>COURSE TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>BLDT 100</td>
<td>BLDT 103</td>
<td>BLDT 121</td>
</tr>
</tbody>
</table>

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

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

TOTAL: 15 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
- Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)

CHOICE 2: Professional Related Courses
- CJUS 103 Criminal Law
- LEGL 215 Busn Law I, Basic Principles

MINIMUM TOTAL: 60

NOTES

1. CRTT 275 requires 100 verified hours of actual writing fieldwork.
2. Students must begin Court and Conference Reporting courses in the fall or spring. 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.
3. A final grade of 3.0 or higher in all CRTT courses is required for graduation.
4. Students must attain the following minimum speeds with 96-97% accuracy for graduation: three timings at 230 wpm O&A; three timings at 200 wpm Jury; three timings at 180 wpm Literary; and two timings at 60 net wpm.
5. This curriculum meets all of the National Court Reporters Association Committee on Approved Student Education (CASE) minimum standards for receiving a degree in Court Reporting.

SUGGESTED COURSE SEQUENCE

Students should check 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.

Fall Admitted Students

| Course | I (SPRING) | II (SPRING) | III (SUMMER) | IV (FAI]
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>CRTT 100</td>
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<td>CRTT 120</td>
<td>CRTT 290</td>
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<td>CRTT 210</td>
<td>CRTT 220</td>
<td>CRTT 230</td>
<td>CRTT 250</td>
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<td>CRTT 255</td>
<td>CRTT 270</td>
<td>CRTT 270</td>
<td>CRTT 275</td>
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<td>CRTT 265</td>
<td>CRTT 250</td>
<td>CRTT 250</td>
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<tr>
<td>CRTT 275</td>
<td>CRTT 275</td>
<td>CRTT 275</td>
<td>CRTT 275</td>
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</tr>
</tbody>
</table>

Spring Admitted Students

| Course | I (SPRING) | II (SPRING) | III (SUMMER) | IV (FAI]
<table>
<thead>
<tr>
<th></th>
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<td>CRTT 100</td>
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<td>CRTT 210</td>
<td>CRTT 220</td>
<td>CRTT 230</td>
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<td>CRTT 245</td>
<td>CRTT 240</td>
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<td>CRTT 255</td>
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<td>CRTT 265</td>
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<tr>
<td>CRTT 275</td>
<td>CRTT 275</td>
<td>CRTT 275</td>
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</tr>
</tbody>
</table>
CREDIT UNION MANAGEMENT
ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 0123 (Effective Fall 2000-Summer 2005)

A credit union manager is responsible for the smooth and efficient functioning of the organization and is responsible to the members of that credit union. Handling money and confidential information, credit union managers make decisions in accordance with policy set by the institution’s board of directors and federal and state laws and regulations. Graduates of this program are prepared to work in various types and sizes of credit unions and other financial institutions.

PREREQUISITES
Students should see the Course Descriptions section of this catalog or the Course Schedule for course prerequisite information. Basic skills assessment and advising information may be found on page 5 of this catalog.

GENERAL EDUCATION
General education is an important part of this program and includes a mathematics competency requirement. To fulfill the mathematics competency requirement, students must may to complete specific course work in mathematics. For information on how to fulfill all general education requirements, see page 23.

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>
<th>TOTAL: 40 CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGG 210</td>
<td>Principles of Accounting I</td>
<td>4</td>
</tr>
<tr>
<td>BUSN 118</td>
<td>Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>CSIB 200</td>
<td>Info Sys Tech/Problem Solving</td>
<td>3</td>
</tr>
<tr>
<td>CUAJ 132</td>
<td>Credit Union Accounting</td>
<td>3</td>
</tr>
<tr>
<td>CUMA 106</td>
<td>Intro Credit Union Operations</td>
<td>3</td>
</tr>
<tr>
<td>CUMA 200</td>
<td>Credit and Collections</td>
<td>3</td>
</tr>
<tr>
<td>CUMA 215</td>
<td>Business Law for Credit Unions</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 234</td>
<td>Diversity in the Workplace</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 200</td>
<td>Principles of Marketing</td>
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<tr>
<td>SPCH 110</td>
<td>Oral Communique in the Workplace</td>
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</tr>
<tr>
<td>WRIT 127</td>
<td>Business Writing</td>
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</table>

LIMITED CHOICE REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>TOTAL: 21–22 CREDITS</th>
</tr>
</thead>
</table>

- **CHOICE 1:** General Education Core Areas
  - 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 (See Note 1)
  - Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)

  **Total:** 0 Credits

- **CHOICE 2:** Management Related (See Note 2)
  - ACGG 211 Principles of Accounting II
  - BUSN 201 International Business
  - BUSN 250 Personal Finance
  - ECON 201 Principles of Economics-Macro
  - ECON 252 Principles of Economics-Macro
  - INSU 265 Principles Risk and Insurance
  - LABR 203 Intro to Labor Relations
  - LABR 204 Employment Law for Managers
  - MATH 117 Math for Business
  - MGMT 150 Managing Customer Relations
  - MGMT 228 Organizational Behavior
  - MGMT 237 Managing/Continual Improvement
  - MGMT 239 Time and Stress Management
  - MGMT 304 Organizational Development
  - MGMT 326 Human Resource Mgmt Skills
  - MKTG 119 Mktg Manage Your Profess Image
  - MKTG 221 Consumer Behavior
  - REAL 275 Real Estate Financing

  **Total:** 17 Credits

CREDITS UNISEMPTION CERTEIFICATE OF COMPLETION

Curriculum Code: 0151 (Effective Fall 2000-Summer 2005)

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>CODE</th>
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<tbody>
<tr>
<td>CUAJ 102</td>
<td>Credit Union Accounting</td>
<td>3</td>
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<tr>
<td>CUMA 100</td>
<td>Intro Credit Union Operations</td>
<td>3</td>
</tr>
<tr>
<td>CUMA 200</td>
<td>Credit and Collections</td>
<td>3</td>
</tr>
<tr>
<td>CUMA 225</td>
<td>Business Law for Credit Unions</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 224</td>
<td>Human Resources Management</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 225</td>
<td>Principles of Management</td>
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LIMITED CHOICE REQUIREMENTS

<table>
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<tr>
<th>CODE</th>
<th>TITLE</th>
<th>TOTAL: 3 CREDITS</th>
</tr>
</thead>
</table>

- **CHOICE 1:** Communication
  - MKTG 234 Diversity in the Workplace
  - MKTG 200 Principles of Marketing
  - SPCH 110 Oral Communique in the Workplace
  - WRIT 127 Business Writing

  **Total:** 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>
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<tr>
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<td>ACGG 210</td>
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<td>BUSN 100</td>
<td>MGMT 224</td>
<td>CUMA 215</td>
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<td>SPCH 110</td>
<td>MKTG 200</td>
<td>MGMT 225</td>
</tr>
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MINIMUM TOTAL

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<th>CREDIT HOURS</th>
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<td>MGMT 225</td>
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<tr>
<td>CUMA 100</td>
<td>CUMA 215</td>
<td>Lim.Ch.</td>
</tr>
</tbody>
</table>

**TOTAL:** 21 CREDITS

**MINIMUM TOTAL:**

**51 CREDITS**

Students are responsible for completing all requirements as stated. The only official documentation of program completion status is an audit conducted by the Registrar's Office that is initiated when students apply for a degree or certificate. Students are expected to apply one semester prior to the semester they intend to graduate.
### Criminal Justice, Corrections Associate in Business Degree

**Curriculum Code:** 0170 (Effective Fall 2000-Summer 2005)

This degree program prepares an individual for a career as a probation or parole officer, corrections officer, halfway house administrator, jail corrections officer, juvenile corrections professional, or for a local corrections position. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

#### PREREQUISITES

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

#### GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. To fulfill the mathematics competency requirement, students may need to complete specific coursework in mathematics. For information on how to fulfill all general education requirements, see page 23.

#### INFORMATION

Contact the Criminal Justice and Law Center, Old Central Building, Room 224, telephone number (517) 483-1570.

#### REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
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<tbody>
<tr>
<td>CISB 100</td>
<td>Intro Computer Info Systems</td>
</tr>
<tr>
<td>CJUS 101</td>
<td>Intro to Criminal Justice</td>
</tr>
<tr>
<td>CJUS 106</td>
<td>Intro to Juvenile Justice</td>
</tr>
<tr>
<td>CJUS 133</td>
<td>Juvenile Residential Services</td>
</tr>
<tr>
<td>CJUS 134</td>
<td>Probation and Parole</td>
</tr>
<tr>
<td>CJUS 245</td>
<td>Report Writing in CJ</td>
</tr>
<tr>
<td>LEGL 160</td>
<td>Critical Thinking in Law</td>
</tr>
<tr>
<td>PSYC 200</td>
<td>Introduction to Psychology</td>
</tr>
<tr>
<td>SOCL 120</td>
<td>Introduction to Sociology</td>
</tr>
<tr>
<td>SPCH 110</td>
<td>Oral Communic in the Workplace</td>
</tr>
<tr>
<td>WRIT 124</td>
<td>Technical Writing</td>
</tr>
</tbody>
</table>

#### Vocational Certificate Requirements

- **CHOICE 1:** General Education Core Areas
  - **Total:** 3 Credits
  - **(See the GENERAL EDUCATION section above)**
  - Writing Core Area (See Note 2)
  - Speech Communication Core Area (See Note 2)
  - Science/Technology Core Area
  - Global Perspectives and Diversity Core Area (See Note 2)
  - Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)

- **CHOICE 2:** Related Professional Courses
  - **Total:** 10 Credits
  - CJUS 102 | Crime Causes & Conditions |
  - CJUS 204 | Criminal Investigation |
  - CJUS 237 | Policing into the 21st Century |
  - SOCL 255 | Contemporary Social Problems |
  - SOCL 250 | Minority Groups |

- **County and Local Detention Vocational Certificate (See Note 4)**
  - CJUS 130 | Local Detention |
  - CJUS 242 | Unarmed Defense |
  - CJUS 246 | Jail Safety and I.D. Issues |
  - CJUS 256 | Interpersonal Comm in Jails |
  - WRIT 117 | Writing Preparation II (See Note 5) |

**MINIMUM TOTAL:** 45 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 core area.
3. Students may select any combination of Choice 2 courses to fulfill this requirement, including courses listed within the County and Local Detention Certificate and the Juvenile Care Worker Certificate.
4. Students completing these five courses and CJUS 101, CJUS 245, CJUS 251 and CJUS 256 with a minimum 2.0 grade in each class will receive the County and Local Detention Vocational Certificate.
5. This course will be waived if student scores five or above on the Writing Placement Test. This test is administered free of charge in the Assessment Center, Room 2100, Gannon Vocational-Technical Center.
6. All Vocational Certificate courses are certified by the Michigan Corrections Officer Training Council.

**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>
<th>I</th>
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<tbody>
<tr>
<td>CJUS 101</td>
<td>CJUS 106</td>
<td>CISB 100</td>
<td>CJUS 255</td>
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<td>CJUS 131</td>
<td>CJUS 245</td>
<td>CJUS 133</td>
<td>PSYC 200</td>
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<td>LEGL 160</td>
<td>CJUS 250</td>
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<td>SOCL 120</td>
<td>CJUS 251</td>
<td>CJUS 135</td>
<td>Lim.Ch.2</td>
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<td>SPCH 110</td>
<td>Lim.Ch.2</td>
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</table>

**Lim.Ch.2**

**Students are responsible for completing all requirements as stated. The only official documentation of program completion status is an audit conducted by the Registrar's Office that is initiated when students apply for a degree or certificate. Students are expected to apply one semester prior to the semester they intend to graduate.**
CRIMINAL JUSTICE

2000-2001 Catalog Lansing Community College

CRIMINAL JUSTICE, LAW ENFORCEMENT
ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 0257 (Effective Fall 2000-Summer 2005)

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 other colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PRE要求

Students should see the Course Descriptions section of this catalog or the Course Schedule for course prerequisite information. Basic skill 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, students must provide evidence that they completed an intermediate algebra course with a grade of C or better, or demonstrate competency in a mathematics course. For information on how to fulfill all general education requirements, see page 23.

INFORMATION

Contact the Criminal Justice and Law Center, Old Central Building, Room 224, telephone number (517) 483-1570.

REQUIREMENTS

<table>
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<td>CJS 101</td>
<td>Intro to Criminal Justice</td>
<td>3</td>
</tr>
<tr>
<td>CJS 102</td>
<td>Crime Causes and Conditions</td>
<td>3</td>
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<tr>
<td>CJS 103</td>
<td>Criminal Law</td>
<td>3</td>
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<tr>
<td>CJS 106</td>
<td>Intro to Juvenile Justice</td>
<td>3</td>
</tr>
<tr>
<td>CJS 301</td>
<td>Criminal Justice Org/Admin</td>
<td>3</td>
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<tr>
<td>CJS 304</td>
<td>Criminal Investigation</td>
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</tr>
<tr>
<td>CJS 205</td>
<td>Policing into the 21st Century</td>
<td>3</td>
</tr>
<tr>
<td>CJS 345</td>
<td>Report Writing in CJ</td>
<td>2</td>
</tr>
<tr>
<td>CJS 255</td>
<td>Human Relations/Criminal Just</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 234</td>
<td>Diversity in the Workplace</td>
<td>3</td>
</tr>
<tr>
<td>SPCH 110</td>
<td>Oral Communic in the Workplace</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>COURSE</th>
<th>TITLE</th>
<th>TOTAL: 23-28 CREDITS</th>
</tr>
</thead>
</table>

COMPLETE THE INDICATED CREDITS FROM EACH CHOICE LISTED BELOW

CHOICE 1: General Education Core Areas

(See the GENERAL EDUCATION section above)

3 Credits

CHOICE 2: Law Enforcement (Choose one subchoice)

20-25 Credits

Subchoice 2A: Mid-Michigan Police Academy Requirements

<table>
<thead>
<tr>
<th>COURSE</th>
<th>TITLE</th>
<th>CREDITS</th>
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<tbody>
<tr>
<td>CJS 260</td>
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<td>3</td>
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<td>CJS 261</td>
<td>Michigan Crime Law &amp; Procedure</td>
<td>3</td>
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<td>CJS 262</td>
<td>Patrol Procedures and Tactics</td>
<td>3</td>
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<tr>
<td>CJS 263</td>
<td>Standard First Aid</td>
<td>2</td>
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<tr>
<td>CJS 264</td>
<td>AGENCY Writing in Law Enforcement</td>
<td>1</td>
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<td>CJS 265</td>
<td>Highway Traffic Operations</td>
<td>3</td>
</tr>
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<td>CJS 266</td>
<td>Basic Police Science</td>
<td>3</td>
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<tr>
<td>CJS 267</td>
<td>Law Enforcement Phys Training</td>
<td>2</td>
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<tr>
<td>CJS 268</td>
<td>Precision Driving</td>
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<td>PFFT 114</td>
<td>Advanced Police Training</td>
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Subchoice 2B: Other Law Enforcement

<table>
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<tbody>
<tr>
<td>CJS 130</td>
<td>Local Detention</td>
<td>3</td>
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<tr>
<td>CJS 203</td>
<td>Criminal Procedure</td>
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<tr>
<td>LEGL 160</td>
<td>Critical Thinking in Law</td>
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<tr>
<td>PSYC 200</td>
<td>Introduction to Psychology</td>
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<tr>
<td>SOCL 120</td>
<td>Introduction to Sociology</td>
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</tr>
<tr>
<td>SOCL 255</td>
<td>Contemporary Social Problems</td>
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</tbody>
</table>

MINIMUM TOTAL

62

NOTE

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

SUGGESTED COURSE SEQUENCE

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

Subchoice 2A: Mid-Michigan Police Academy

<table>
<thead>
<tr>
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Subchoice 2B: Other Law Enforcement

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<tr>
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STUDENTS ARE RESPONSIBLE FOR COMPLETING ALL REQUIREMENTS AS STATED. THE ONLY OFFICIAL DOCUMENTATION OF PROGRAM COMPLETION STATUS IS AN AUDIT CONDUCTED BY THE REGISTRAR'S OFFICE THAT IS ISSUED WHEN STUDENTS APPLY FOR A DEGREE OR CERTIFICATE. STUDENTS ARE EXPECTED TO APPLY ONE SEMESTER PRIOR TO THE SEMESTER THEY INTEND TO GRADUATE.
**MID-MICHIGAN POLICE ACADEMY CERTIFICATE OF COMPLETION**

Curriculum Code: 0737 (Effective Fall 2000 - Summer 2001)

The Mid-Michigan Police Academy at Lansing Community College is a 15-week basic police training program designed to meet or exceed state mandated certification requirements for preparing individuals for a career in law enforcement. Within the 15 weeks, more than 650 hours are utilized to provide training in 70 different topic areas. The curriculum includes topics such as criminal law and procedure, investigations, patrol procedures, human relations, conflict mediation, firearms, precision driving, use of lethal and non-lethal force, defensive tactics, report writing, traffic enforcement, victimization, and crime prevention. The emphasis in this academy is placed upon practical and hands-on training techniques. All courses for this program must be completed in a single semester.

This is a selective admission program. In order to be considered as a candidate for this program, students must meet basic admission requirements beyond those required for admission to the college. All of the courses for this program are open only to students officially admitted to the Police Academy Program.

**PREREQUISITES**

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

**INFORMATION**

The admission and/or program requirements for this program may change each academic year. For the most recent and complete information about admission requirements, contact the Police Academy Coordinator, William Martin, in the Police Academy Office, Old Central Building, Room 129B, telephone number (517) 483-5248, or contact the LCC Admissions Office, Gannon Vocational-Technical Center, Room 2200, telephone number (517) 483-1254.

**REQUIREMENTS FOR ADMISSION TO THE MID-MICHIGAN POLICE ACADEMY PROGRAM**

For current information about admission requirements, contact the Police Academy Coordinator, William Martin, in the Police Academy Office, Old Central Building, Room 129B, telephone number (517) 483-5248, or contact the LCC Admissions Office, Gannon Vocational-Technical Center, Room 2200, telephone number (517) 483-1254.

**MID-MICHIGAN POLICE ACADEMY PROGRAM REQUIREMENTS**

Curriculum Code: 0737

**REQUIREMENTS**

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<td>CJJS 291</td>
<td>Michigan Crim. Law &amp; Procedure</td>
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<td>CJJS 282</td>
<td>Patrol Procedures and Tactics</td>
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<td>CJJS 283</td>
<td>Standard First Aid</td>
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<td>CJJS 264</td>
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<td>CJJS 285</td>
<td>Highway Traffic Operations</td>
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<td>CJJS 286</td>
<td>Basic Police Science</td>
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<td>CJJS 287</td>
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<tr>
<td>PRFF 114</td>
<td>Advanced Circuit Training</td>
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**MINIMUM TOTAL** 25 CREDITS

**NOTE**

1. Students must complete each of these courses with a minimum 2.0 grade to receive this certificate which is endorsed by the Michigan Juvenile Detention Association.

**SUGGESTED COURSE SEQUENCE**

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

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### ELECTRICAL TECH, CONSTRUCTION
#### CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 0759 (Effective Fall 2000–Summer 2005)

This certificate is designed to provide students with a background in applied electrical theory and the basic mechanical skills necessary to the practicing construction electrician.

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

#### INFORMATION
Contact the Technology Careers Department, Gannon Vocational-Technical Center, Room 136, telephone number (517) 483-1336.

#### REQUIREMENTS

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<td>ELTE 100</td>
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<td>ELTE 112</td>
<td>Basic Wiring Installation</td>
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<td>ELTE 121</td>
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<td>ELTE 123</td>
<td>Motors and Transformers</td>
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<tr>
<td>ELTE 131</td>
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<tr>
<td>ELTE 141</td>
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<tr>
<td>ELTE 145</td>
<td>Electrical Prints for Building</td>
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<tr>
<td>ELTE 240</td>
<td>Electrical Estimating</td>
<td>3</td>
</tr>
<tr>
<td>ELTE 260</td>
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<td>4</td>
</tr>
<tr>
<td>INAU 100</td>
<td>Intro Industrial Automation</td>
<td>4</td>
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</tbody>
</table>

**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 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>BLDT 103</td>
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### ELECTRICAL TECH, CONTROL/MAINT
#### CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 0760 (Effective Fall 2000–Summer 2005)

This certificate is designed to provide students with a background in applied electrical theory and the basic mechanical skills necessary to the practicing electrician in the machine control field.

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

#### INFORMATION
Contact the Technology Careers Department, Gannon Vocational-Technical Center, Room 136, telephone number (517) 483-1336.

#### REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
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<td>Intro/Programmable Controllers</td>
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<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 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>INAU 100</td>
<td>ELTE 131</td>
<td>ELTE 150</td>
</tr>
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</table>
## ELECTRICAL TECHNOLOGY

**Associate in Applied Science Degree**

**Curriculum Code:** D134 (Effective Fall 2000–Summer 2005)

Students in this program may select either the construction specialty or the machine control and maintenance specialty. Construction electricians install electrical wiring and systems in homes, offices, stores or industrial plants. Machine control designers are responsible for designing control circuits which operate machinery in plants. Maintenance electricians work in industry maintaining and troubleshooting power and control circuits on machinery. Both specialties require mechanical aptitude, logical thinking and problem-solving skills. Employment opportunities vary with each specialty.

### PREREQUISITES

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

### GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics. For information on how to fulfill all general education requirements, see page 23.

### INFORMATION

Contact the Technology Careers Department, Gannon Vocational-Technical Center, Room 136, telephone number (517) 483-1336.

### REQUIREMENTS

<table>
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<tr>
<td>INAU 100</td>
<td>Intro Industrial Automation</td>
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</table>

**TOTAL: 33 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
- Speech Communication Core Area
- Science/Technology Core Area
- Global Perspectives and Diversity Core Area
- Mathematics Competency

**CHOICE 2: Electrical Specialization (Choose one subchoice)**

22 Credits

**Subchoice 2A: Construction Specialization**

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<td>Construction Cost Estimating</td>
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<td>HVAC 106</td>
<td>Fundamentals of HVAC</td>
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**Subchoice 2B: Machine Control and Maintenance Specialization**

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<td>Industrial Control Design</td>
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<td>ELTE 261</td>
<td>Allen-Bradley PLC-3 Advanced</td>
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<td>Applied Automation</td>
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<tr>
<td>MFGM 101</td>
<td>Industrial Hydraulics</td>
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</table>

**MINIMUM TOTAL**

**97 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.

**Construction Specialty**

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<td>BLDT 277</td>
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<td>INAU 100</td>
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<td>Lim.Ch.</td>
<td>ELTE 150</td>
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**Control and Maintenance Specialty**

<table>
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<th>II</th>
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<td>Lim.Ch.</td>
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**Students are responsible for completing all requirements as stated. The only official documentation of program completion status is an audit conducted by the Registrar’s Office that is initiated when students apply for a degree or certificate. Students are expected to apply one semester prior to the semester they intend to graduate.**

LANSING COMMUNITY COLLEGE CATALOG 2000–2001


ELECTRONICS TECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 0644 (Effective Fall 2000–Summer 2005)
Electronics technicians install, operate, maintain, and service electronics equipment. They also diagnose and repair problems caused by mechanical or electrical malfunctions in individual electronic units and in complex systems such as local area networks (LANs) and industrial controllers. They deal with the analysis and component level troubleshooting of analog and digital circuits. Electronics technicians are employed with automotive manufacturers, industrial automation companies, business machine service companies, telephone companies, hospitals, aircraft service companies, radio and TV service companies, instrumentation sales, robotics repair companies, and maintenance companies. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

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

GENERAL EDUCATION
General education is an important part of this program and includes a mathematics competency requirement. To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics. For information on how to fulfill all general education requirements, see page 23.

INFORMATION
Contact the Technology Careers Department, Garnon Vocational-Technical Center, Room 136, telephone number (517) 483-1336.

REQUIREMENTS

<table>
<thead>
<tr>
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<td>ELCT 101</td>
<td>Analog Problems</td>
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<td>DC Circuits</td>
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<tr>
<td>ELCT 110</td>
<td>AC Circuits</td>
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<td>ELCT 112</td>
<td>Transistors</td>
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<td>ELCT 120</td>
<td>Programming Preparation</td>
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<td>ELCT 131</td>
<td>Digital Basics</td>
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<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>
<td>Linear Circuits II</td>
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<td>Digital Commun and Networking</td>
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<td>ELCT 251</td>
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<td>ELCT 271</td>
<td>Communications I</td>
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<td>ELCT 272</td>
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<td>SPCH 110</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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<tr>
<th>Course</th>
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<th>CREDIT HOURS</th>
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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
- Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)

CHOICE 2: Electronics Specialty (Choose one subchoice)

Subchoice 2A: Biomedical
- ELCT 281 | Consumer Product Systems | 3 |
- ELCT 290 | Biomedical Internship | 2 |

Subchoice 2B: Communications
- ELCT 281 | Consumer Product Systems | 3 |
- ELCT 291 | Communications Internship | 2 |

Subchoice 2C: Digital
- ELCT 242 | Comp Infrcng and Peripherals | 3 |
- ELCT 282 | Digital Electronics Internship | 2 |

MINIMUM TOTAL 65

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

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

<table>
<thead>
<tr>
<th>Course</th>
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<td>ELCT 120</td>
<td>ELCT 251</td>
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<td>ELCT 110</td>
<td>ELCT 131</td>
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<td>SPCH 110</td>
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</table>

STUDENTS ARE RESPONSIBLE FOR COMPLETING ALL REQUIREMENTS AS STATED. THE ONLY OFFICIAL DOCUMENTATION OF PROGRAM COMPLETION STATUS IS AN ADMISSIONS OFFICE ISSUED WHEN STUDENTS APPLY FOR A DEGREE OR CERTIFICATE. STUDENTS ARE EXPECTED TO APPLY ONE SEMESTER PRIOR TO THE SEMESTER THEY INTEND TO GRADUATE.
## ELECTRONICS TROUBLESHOOTER
### CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 0895 (Effective Fall 2000–Summer 2005)

Electronics troubleshooters are trained in basic electronics circuitry and have basic troubleshooting skills. They typically work in an entry-level position under the guidance of a more experienced technician.

### PREREQUISITES

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

### INFORMATION

Contact the Technology Careers Department, Gannon Vocational-Technical Center, Room 136, telephone number (517) 483-1396.

### REQUIREMENTS

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<td>ELCT 161</td>
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</tr>
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<td>ELCT 181</td>
<td>Computer Test Equipment II</td>
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</tr>
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<td>ELCT 251</td>
<td>Electronic Troubleshooting</td>
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</tr>
<tr>
<td>ELCT 261</td>
<td>Consumer Product Systems</td>
<td>3</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 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>ELCT 161</td>
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</table>
FIRE SCIENCE

2000-2001 Catalog Lansing Community College  www.lcc.edu

FIRE SCIENCE ACADEMY
CERTIFICATE OF COMPLETION

Curriculum Code: 0709 (Effective Fall 2000 - Summer 2001)

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, HazMat Awareness, and HazMat Operations.

The Fire Science Academy is a selective admission program. In order to be considered as a candidate for this program, students must meet basic admission requirements beyond those required for admission to the college. Many of the courses for this program are open only to students officially admitted to the Fire Science Academy Program.

PREREQUISITES

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

INFORMATION

The admission and/or graduation requirements for this program may change each academic year. The program requirements below apply only to those students who have been admitted to the program for the 2000/2001 academic year.

For the most recent and complete information, interested students should contact the Admissions Office, Gannon Vocational-Technical Center, Room 2200, telephone number (517) 483-1254.

REQUIREMENTS FOR ADMISSION TO THE FIRE SCIENCE ACADEMY PROGRAM

For current information about admission requirements, students must contact the Admissions Office, Gannon Vocational-Technical Center, Room 2200, telephone number (517) 483-1254.

REQUIREMENTS

<table>
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<td>MI F.F.T.C. Basic Fire Law I</td>
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<tr>
<td>PFHW 109</td>
<td>Emergency Services Fitness I</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 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: 0123 (Effective Fall 2000 - Summer 2005)

This degree program prepares an individual for a career in fire fighting. Included in this curriculum is successful completion of a Michigan Fire Fighting Training Council Fire Fighter I and Fire Fighter II course. In addition, students are required to complete course work in fire safety information and inspection, fire suppression, hazardous material spills and investigative techniques, fire prevention and law, building construction, command and administration, and hydraulics and pump operations. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES

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

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics. For information on how to fulfill all general education requirements, see page 23.

INFORMATION

Contact: the Human, Health and Public Service Careers Department, Gannon Vocational-Technical Center, Room 175, telephone number (517) 483-1410.

REQUIREMENTS

<table>
<thead>
<tr>
<th>COURSE</th>
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<tbody>
<tr>
<td>FIRE 100 Introduction to Fire Fighting</td>
<td>3</td>
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<td>FIRE 101 MI F.F.T.C. Basic Fire Law I</td>
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<td>FIRE 102 MI F.F.T.C. Basic Fire Law II</td>
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<tr>
<td>FIRE 110 Fire Prevention and Law</td>
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<td>FIRE 115 Building Construction/Fire Ser</td>
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<td>FIRE 120 Chemistry/Hazardous Materials</td>
<td>3</td>
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<tr>
<td>FIRE 125 Fire Protection Sys/Equipment</td>
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<tr>
<td>FIRE 130 Fire Hydraulics/Pump Operation</td>
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<tr>
<td>FIRE 150 Fire Command and Operations</td>
<td>4</td>
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<tr>
<td>FIRE 210 Fire Investigation</td>
<td>4</td>
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<tr>
<td>FIRE 220 Hazardous Materials/Fire Ser</td>
<td>4</td>
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<tr>
<td>FIRE 230 Fire Administration</td>
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<td>PFHW 110 Emergency Services Fitness II</td>
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<td>PFHW 111 Emergency Services Fitness III</td>
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<tr>
<td>SPCH 120 Dynamics of Communication</td>
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<tr>
<td>WRIT 124 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

(See the GENERAL EDUCATION section above)

Writing Core Area (See Note 3) 0
Speech Communication Core Area (See Note 2) 0
Science/Technology Core Area 3
Global Perspectives and Diversity Core Area 3
Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.) 1

MINIMUM TOTAL: 6 CREDITS

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 and II certification may be eligible for FIRE 101 and/or FIRE 102 to be waived. Students should consult with a Fire Science program advisor regarding this segment of the program.

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

SUGGESTED COURSE SEQUENCE

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

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<tr>
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<td>SPCH 120</td>
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<td>FIRE 250</td>
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<td>PFHW 111</td>
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STUDENTS ARE RESPONSIBLE FOR COMPLETING ALL REQUIREMENTS AS STATED. THE ONLY OFFICIAL DOCUMENTATION OF PROGRAM COMPLETION STATUS IS AN AUDIT CONDUCTED BY THE REGISTRATION'S OFFICE THAT IS INITIATED WHEN STUDENTS APPLY FOR A DEGREE OR CERTIFICATE. STUDENTS ARE EXPECTED TO APPLY ONE SEMESTER PRIOR TO THE SEMESTER THEY INTEND TO GRADUATE.

100 I LANSING COMMUNITY COLLEGE CATALOG 2000–2001
### Geographic Information Systems

**Curriculum Code:** 0224 (Effective Fall 2000–Summer 2005)

Geographic Information Systems and Geospatial Technology combines computer technology, mapping technologies, aerial photography, and satellite imagery with the most current environmental resource management and environmental analysis software. Geographic Information Systems (GIS) technicians work with computer drafting, design, database management, graphic design, and computer analysis. Environmental technology requirements include a working knowledge of natural systems and related regulations and their assessment, planning, restoration, and management. GIS technicians are employed with engineering and design firms, state and federal agencies, environmental firms, parks and recreation departments, and with municipalities and local government units. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

### Prerequisites

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

### General Education

General education is an important part of this program and includes a mathematics competency requirement. To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics.

For information on how to fulfill all general education requirements, see page 23.

### Information

Contact the Technology Careers Department, Gannon Vocational-Technical Center, Room 130, telephone number (517) 483-1596.

### Requirements

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<td>Principles of Geographical Info Sys</td>
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<td>GRET 209</td>
<td>Applications in GIS</td>
<td>3</td>
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<tr>
<td>GRET 210</td>
<td>Global Positioning Systems</td>
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<tr>
<td>GRET 220</td>
<td>Hydrological Systems</td>
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<td>GRET 221</td>
<td>Landforms/Soil Systems in GIS</td>
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<td>GRET 222</td>
<td>Environmental Resource Mgmt</td>
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<tr>
<td>GRET 240</td>
<td>Cartography in GIS</td>
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<td>GRET 241</td>
<td>Remote Sensing/AirPhoto Interpr</td>
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<td>GRET 243</td>
<td>ORACLE/Geographic Info Sys</td>
<td>3</td>
</tr>
<tr>
<td>LAND 150</td>
<td>Principles of Landscape Arch</td>
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<tr>
<td>LAND 180</td>
<td>Landscape Ecology</td>
<td>3</td>
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<tr>
<td>WRIT 124</td>
<td>Technical Writing</td>
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**Total:** 36 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 (See Note 1) 3
- Speech Communication Core Area 3
- Science/Technology Core Area 3
- Global Perspectives and Diversity Core Area 3

**TOTAL:** 9 Credits

**Note 1:**

- For Information on how to fulfill the requirement. Course work may be needed.

#### Choice 2: GIS Specializations (Choose one subchoice)

**TOTAL:** 6–10 Credits

**Subchoice 2A:**

- GRET 203 | Beginning MicroStation | 3       |
- GRET 204 | MicroStation Graphic Environ | 3       |
- GRET 208 | Advanced Techniques in GIS | 3       |

**Subchoice 2B:**

- GRET 253 | Basics of ARCView | 1       |
- GRET 255 | Beginning ARC/Info | 3       |
- GRET 256 | Advanced ARC/Info | 3       |
- LAND 282 | Computer Draft/Design Land Arch | 3       |

**TOTAL:** 6–10 Credits

### Choice 3: Additional Related Courses

**TOTAL:** 12 Credits

- GRET 211 | Geomedia-Internet GIS | 3       |
- GRET 213 | Advanced MicroStation | 3       |
- GRET 248 | GIS/GPS Field Systems | 3       |
- LAND 181 | Landscape Restoration/Manag | 3       |
- LAND 242 | Ecological Land Planning | 3       |
- LAND 283 | Beginning LANDCAAD | 3       |

**Minimum Total:** 66

**Note:**

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

### Suggested Course Sequence

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

<p>| | | | |</p>
<table>
<thead>
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<td>GRET 205</td>
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<td>GRET 221</td>
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<td>GRET 241</td>
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<td>GRET 240</td>
<td>WRIT 124</td>
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</table>

**Students are responsible for completing all requirements as stated. The only official documentation of program completion status is an audit conducted by the Registrar’s Office that is initiated when students apply for a degree or certificate. Students are expected to apply one semester prior to the semester they intend to graduate.**

LANSING COMMUNITY COLLEGE CATALOG 2000–2001
BASIC EMERGENCY MED SERVICES
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 0260 (Effective Fall 2000–Summer 2005)

This certificate program prepares an individual to be a basic emergency medical technician (EMT). Basic EMTs perform immediate basic emergency care in medical and trauma emergencies, basic EMTs staff ambulances and are employed in hospitals. State licensing is required. An EMT Academy option is available to students.

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

INFORMATION
Contact the Human, Health and Public Service Careers Department, Gannon Vocational-Technical Center, Room 175, telephone number (517) 483-1410.

REQUIREMENTS

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<tr>
<td>CISB 200</td>
<td>Info Sys Tech/Problem Solving</td>
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<td>EMTA 101</td>
<td>Basic EMT I</td>
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<td>Basic EMT II</td>
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<td>Basic EMT IV</td>
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<td>EMTA 105</td>
<td>Ambulance Driving</td>
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<tr>
<td>EMTA 108</td>
<td>Legal Issues in Emergency Med</td>
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<tr>
<td>EMTA 112</td>
<td>Basic EMT Clinical</td>
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<tr>
<td>EMHA 114</td>
<td>Rescue/Extrication/Danger Situ</td>
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<tr>
<td>WRIT 124</td>
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MINIMUM TOTAL: 32 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.

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<thead>
<tr>
<th>I</th>
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<td>ANAT 145</td>
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EMT Academy Option

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<td>EMTA 104</td>
<td>EMTA 105</td>
<td>WRIT 124</td>
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</table>

DENTAL ASSISTANT
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 0193 (Effective Fall 2000 - Summer 2001)

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 taking dental X-rays, charting the teeth, assisting in 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, and 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 Course Schedule for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

INFORMATION
The admission and 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 2000/2001 academic year. For the most recent and complete information, interested students should contact the Admissions Office, Gannon Vocational-Technical Center, Room 2300, 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 007F, 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 2300, telephone number (517) 483-1254.

REQUIREMENTS

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<td>DAST 110</td>
<td>Dental Instruments</td>
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<td>DAST 111</td>
<td>Prinical Dental Assisting</td>
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<td>DAST 112</td>
<td>Dental Anatomy</td>
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<td>DAST 114</td>
<td>Preventive Dentistry &amp; Pro</td>
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<td>DAST 116</td>
<td>Dental Materials</td>
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<td>DAST 118</td>
<td>Dental Assisting Principles</td>
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<td>DAST 126</td>
<td>RDA Procedures - OA</td>
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<td>EMSB 102</td>
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MINIMUM TOTAL: 34.5 CREDITS

SUGGESTED COURSE SEQUENCE

Students begin this program each fall semester and courses are offered once a year in the following sequence.

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DENTAL HYGIENIST
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 0273 (Effective Fall 2000–Summer 2002)

Dental hygienists are licensed preventive oral health care professionals. They provide educational, clinical, and therapeutic services to patients in dental offices, schools, hospitals, long-term care facilities, and other public health programs. Clinical skills include performing patient assessments, taking health histories; examining head, neck and oral tissues for disease; checking blood pressures; exposing and processing dental x-ray pictures; applying decay-preventing agents to the teeth; polishing fillings; scaling and root planing teeth; and polishing teeth. Upon graduation from this accredited program, one is eligible to take the written and clinical licensing exams. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

This is a selective admission program. In order to be considered as a candidate for this program, students must meet basic admission requirements beyond those required for admission to the college. Many of the courses for this program are open only to students officially admitted to the Dental Hygienist Program.

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

GENERAL EDUCATION
General education is an important part of this program and includes a mathematics competency requirement. To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics. For information on how to fulfill all general education requirements, see page 23.

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 2000-2001 academic year. For the most recent and complete information, interested students should contact the Admissions Office, Gannon Vocational-Technical Center, Room 2200, telephone number (517) 483-1254. For Dental Hygienist career advising information, contact the Dental Advisor at the Dental Hygienist Program office, Arts and Sciences Building, Room 007F, telephone number (517) 483-1457.

REQUIREMENTS FOR ADMISSION TO THE DENTAL HYGIENIST PROGRAM
For current information about admission requirements, students must contact the Admissions Office, Gannon Vocational-Technical Center, Room 2200, telephone number (517) 483-1254.

REQUIREMENTS

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<td>DHYN 122</td>
<td>Principles of Periodontics</td>
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<td>Nutrition and Oral Health</td>
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<tr>
<td>SOCL 120</td>
<td>Introduction to Sociology</td>
<td>3</td>
<td></td>
</tr>
</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>TOTAL</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>0</td>
</tr>
<tr>
<td>Science/Technology Core Area</td>
<td>0</td>
</tr>
<tr>
<td>Global Perspectives and Diversity Core Area</td>
<td>0</td>
</tr>
<tr>
<td>Mathematics Competency</td>
<td>(See page 23 for information on how to fulfill this requirement. Course work may be needed.)</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL 76

NOTES
1. Students completing REQUIREMENTS have fulfilled the requirements for this core area.
2. DHYN 224, Testing Styles and Inventory, 2 credits, is an optional course to prepare for Dental Hygiene licensure exams.
3. Dental Hygienist students desiring eligibility to take the Michigan Registered Dental Assistant licensure exam must also successfully complete DHYN 223, RDA Pre-DH, 2 credits, offered spring semester.
4. Current Basic Cardiac Life Support Certification (BCLS) is required throughout the program. (EMBS 112 or American Red Cross Provider C.)

SUGGESTED COURSE SEQUENCE

Courses listed in semesters I, II, and III below must be completed prior to admission to the Dental Hygienist Program as part of the requirements for admission. Once admitted to the program, students begin semester IV courses during fall semester. DHYN and DADM 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>DHYN 110</td>
<td>DADM 128</td>
<td>DHYN 210</td>
</tr>
<tr>
<td>DHYN 112</td>
<td>DHYN 120</td>
<td>DHYN 212</td>
</tr>
<tr>
<td>DHYN 114</td>
<td>DHYN 122</td>
<td>DHYN 214</td>
</tr>
<tr>
<td>DHYN 116</td>
<td>DHYN 124</td>
<td>DHYN 216</td>
</tr>
</tbody>
</table>

Students are responsible for completing all requirements as stated. The only official documentation of program completion status is an audit conducted by the Registrar's Office that is initiated when students apply for a degree or certificate. Students are expected to apply one semester prior to the semester they intend to graduate.

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### DIAGNOSTIC MEDICAL SONOGRAPHY

**ASSOCIATE IN APPLIED SCIENCE DEGREE**

Curriculum Code: 0790 (Effective Fall 2000–Summer 2002)

Program prepares an individual to use ultrasonic 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 sonar). 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 Course Schedule for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

**GENERAL EDUCATION**

General education is an important part of this program and includes a mathematics competency requirement. To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics. For information on how to fulfill all general education requirements, see page 23.

**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 2000/2001 academic year.

For the most recent and complete information, interested students should contact the Admissions Office, Gannon Vocational-Technical Center, Room 2200, telephone number (517) 485-1254.

**REQUIREMENTS FOR ADMISSION TO THE DIAGNOSTIC MEDICAL SONOGRAPHY PROGRAM**

For current information about admission requirements, students must contact the Admissions Office, Gannon Vocational-Technical Center, Room 2200, telephone number (517) 485-1254.

**REQUIREMENTS**

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>IDM5 200</td>
<td>Sonographic Introduction</td>
<td>2</td>
</tr>
<tr>
<td>IDM5 201</td>
<td>General Sonography I: Abdomen</td>
<td>4</td>
</tr>
<tr>
<td>IDM5 202</td>
<td>OB/GYN Sonography I</td>
<td>4</td>
</tr>
<tr>
<td>IDM5 234</td>
<td>Sonographic Physics</td>
<td>2</td>
</tr>
<tr>
<td>IDM5 245</td>
<td>Sonographic Instrumentation</td>
<td>2</td>
</tr>
<tr>
<td>IDM5 265</td>
<td>General Sonography II</td>
<td>4</td>
</tr>
<tr>
<td>IDM5 266</td>
<td>OB/GYN Sonography II</td>
<td>3</td>
</tr>
<tr>
<td>IDM5 280</td>
<td>Clinical Experience I</td>
<td>5</td>
</tr>
<tr>
<td>IDM5 281</td>
<td>Clinical Experience II</td>
<td>7</td>
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<tr>
<td>IDM5 282</td>
<td>Clinical Experience III</td>
<td>12</td>
</tr>
<tr>
<td>IDM5 283</td>
<td>Clinical Experience IV</td>
<td>7</td>
</tr>
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</table>

**TOTAL: 52 CREDITS**

**LIMITED CHOICE REQUIREMENTS**

| TOTAL: 12 CREDITS |

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

**CHOICE 1: General Education Core Areas**

12 Credits

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

**MINIMUM TOTAL** 64

**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 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>IDM5 200</td>
<td>IDM5 234</td>
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<td>IDM5 201</td>
<td>IDM5 265</td>
<td>IDM5 263</td>
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<tr>
<td>IDM5 222</td>
<td>IDM5 266</td>
<td>Lim.Ch.</td>
<td></td>
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<tr>
<td>IDM5 280</td>
<td>IDM5 281</td>
<td>Lim.Ch.</td>
<td></td>
</tr>
<tr>
<td>Lim.Ch.</td>
<td>Lim.Ch.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
EMERGENCY MEDICAL SERVICES ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 6276 (Effective Fall 2000-Summer 2005)

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

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics. For information on how to fulfill all general education requirements, see page 23.

INFORMATION

Contact the Human, Health and Public Service Careers Department, Gannon Vocational-Technical Center, Room 175, telephone number (517) 483-1410.

REQUIREMENTS

<table>
<thead>
<tr>
<th>COURSE</th>
<th>TITLE</th>
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</thead>
<tbody>
<tr>
<td>ANAT 146</td>
<td>Introductory Anat &amp; Physiology</td>
<td>4</td>
</tr>
<tr>
<td>CISB 200</td>
<td>Info Sys Tech/Problem Solving</td>
<td>3</td>
</tr>
<tr>
<td>EMTA 101</td>
<td>Basic EMT I</td>
<td>4</td>
</tr>
<tr>
<td>EMTA 102</td>
<td>Basic EMT II</td>
<td>2</td>
</tr>
<tr>
<td>EMTA 103</td>
<td>Basic EMT III</td>
<td>4</td>
</tr>
<tr>
<td>EMTA 104</td>
<td>Basic EMT IV</td>
<td>2</td>
</tr>
<tr>
<td>EMTA 112</td>
<td>Basic EMT Clinical</td>
<td>2</td>
</tr>
<tr>
<td>PARA 221</td>
<td>Paramedic Medical Trauma I</td>
<td>4</td>
</tr>
<tr>
<td>PARA 222</td>
<td>Paramedic Medical Trauma II</td>
<td>4</td>
</tr>
<tr>
<td>PARA 231</td>
<td>Paramedic Cardiology I</td>
<td>2</td>
</tr>
<tr>
<td>PARA 232</td>
<td>Paramedic Cardiology II</td>
<td>2</td>
</tr>
<tr>
<td>PARA 241</td>
<td>Paramedic Pharmacology I</td>
<td>2</td>
</tr>
<tr>
<td>PARA 242</td>
<td>Paramedic Pharmacology II</td>
<td>2</td>
</tr>
<tr>
<td>PARA 251</td>
<td>Paramedic Skills I</td>
<td>2</td>
</tr>
<tr>
<td>PARA 252</td>
<td>Paramedic Skills II</td>
<td>2</td>
</tr>
<tr>
<td>PARA 261</td>
<td>Paramedic Clinical I</td>
<td>3</td>
</tr>
<tr>
<td>PARA 262</td>
<td>Paramedic Clinical II</td>
<td>4</td>
</tr>
<tr>
<td>PARA 263</td>
<td>Paramedic Internship</td>
<td>3</td>
</tr>
<tr>
<td>PFHW 111</td>
<td>Emergency Services Fitness III</td>
<td>1</td>
</tr>
<tr>
<td>PFHW 112</td>
<td>Emergency Services Fitness IV</td>
<td>1</td>
</tr>
<tr>
<td>SPCH 110</td>
<td>Oral Commun in the Workplace</td>
<td>3</td>
</tr>
<tr>
<td>WRT 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.

<table>
<thead>
<tr>
<th>CHOICE</th>
<th>GENERAL EDUCATION Core Areas</th>
<th>3 Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Writing Core Area (See Note 1)</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Speech Communication Core Area (See Note 1)</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Science/Technology Core Area (See Note 1)</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Global Perspectives and Diversity Core Area</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed)</td>
<td></td>
</tr>
</tbody>
</table>

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, 109, and 114 to satisfy Choice 2. Students who have already completed Basic EMT and Paramedic certificate programs may elect EMTA 222 to satisfy Choice 2.
3. This curriculum includes PARA 221 through PARA 263 which are the Paramedic Certificate Program courses. The Paramedic Certificate Program is a selective admissions program with minimum 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>
<tr>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANAT 145</td>
<td>EMTA 103</td>
<td>CISB 200</td>
<td>PARA 222</td>
</tr>
<tr>
<td>EMTA 101</td>
<td>EMTA 104</td>
<td>PARA 221</td>
<td>PARA 232</td>
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<tr>
<td>EMTA 102</td>
<td>EMTA 112</td>
<td>PARA 231</td>
<td>PARA 242</td>
</tr>
<tr>
<td>WRT 124</td>
<td>SPCH 110</td>
<td>PARA 241</td>
<td>PARA 252</td>
</tr>
<tr>
<td></td>
<td>EMTA 112</td>
<td>PARA 251</td>
<td>PARA 262</td>
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</tr>
</tbody>
</table>
MASSAGE THERAPY
CERTIFICATE OF COMPLETION

Curriculum Code: 0186 (Effective Fall 2000–Summer 2005)

This program prepares an individual in the field of soft tissue massage. Massage therapists may be employed in private practice or in a variety of health care settings 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 Course Schedule for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

INFORMATION

Contact the Human, Health and Public Service Careers Department, Gannon Vocational-Technical Center, Room 175, telephone number (517) 485-1410.

REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>TOTAL: 25 CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANAT 145</td>
<td>Introductory Anat &amp; Physiology</td>
<td>4</td>
</tr>
<tr>
<td>MASE 270</td>
<td>Massage Therapy-Beginning</td>
<td>2</td>
</tr>
<tr>
<td>MASE 271</td>
<td>Massage Therapy-Intermediate</td>
<td>2</td>
</tr>
<tr>
<td>MASE 273</td>
<td>Human Structural Dynamics</td>
<td>2</td>
</tr>
<tr>
<td>MASE 274</td>
<td>Massage Laboratory (See Note 1)</td>
<td>2</td>
</tr>
<tr>
<td>MASE 275</td>
<td>Touch for Health</td>
<td>1</td>
</tr>
<tr>
<td>MASE 277</td>
<td>Polarity Therapy I</td>
<td>2</td>
</tr>
<tr>
<td>MASE 279</td>
<td>Business Applications/Mass</td>
<td>2</td>
</tr>
<tr>
<td>MASE 280</td>
<td>Cam Approach Therap Massage</td>
<td>3</td>
</tr>
<tr>
<td>MASE 281</td>
<td>Sports Massage Techniques</td>
<td>2</td>
</tr>
<tr>
<td>PFHW 163</td>
<td>Healthy Lifestyles</td>
<td>2</td>
</tr>
<tr>
<td>PFHW 181</td>
<td>Stress Management</td>
<td>1</td>
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LIMITED CHOICE REQUIREMENTS

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

**CHOICE 1:**

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>2–3 Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MASE 278</td>
<td>Polarity Therapy II</td>
<td>2</td>
</tr>
<tr>
<td>PFHW 103</td>
<td>Med Alternatives/Herb &amp; Win</td>
<td>2</td>
</tr>
<tr>
<td>PFHW 181</td>
<td>Self-Awareness: Key to Wellness</td>
<td>2</td>
</tr>
<tr>
<td>PFIS 139</td>
<td>Therapeutic Touch and Yoga</td>
<td>3</td>
</tr>
</tbody>
</table>

**MINIMUM TOTAL**

27

NOTES

1. The Massage Laboratory consists of 96 hours of supervised massage work.
   Students must complete the lab within one (1) year of enrollment. Students must request an "I" grade (incomplete) from the instructor each semester until the total 96 required hours are completed. Only those students completing the minimum 96 supervised lab hours will be eligible for an "A" grade.
2. The Certificate of Completion is not affiliated with any national certification organization.
3. All courses must be completed with a 2.5 grade or better to receive the Certificate of Completion.
4. All massage courses must be completed within five years of enrollment in the first massage course.

SUGGESTED COURSE SEQUENCE

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

<table>
<thead>
<tr>
<th>II</th>
<th>III</th>
<th>IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANAT 145</td>
<td>MASE 271</td>
<td>MASE 274</td>
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<td>MASE 270</td>
<td>MASE 273</td>
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<td>MASE 275</td>
<td>MASE 280</td>
<td>Lim.Ch.1</td>
</tr>
<tr>
<td>PFHW 163</td>
<td>PFHW 181</td>
<td></td>
</tr>
</tbody>
</table>
MEDICAL ASSISTANT
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 0248 (Effective Fall 2000 - Summer 2001)

Program prepares a person to assist the physician in patient care management. The medical assistant is administrative and clinical. Duties include assisting patients, appointment scheduling, telephone and written communication, managing the 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 examination 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 Course Schedule for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

INFORMATION
The admission and 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 2000-2001 academic year. For the most recent and complete information, interested students should contact the Admissions Office, Gannon Vocational-Technical Center, Room 2200, telephone number (517) 483-1254.

REQUIREMENTS FOR ADMISSION TO THE MEDICAL ASSISTANT PROGRAM
For current information about admission requirements, students must contact the Admissions Office, Gannon Vocational-Technical Center, Room 2200, telephone number (517) 483-1254.

REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANCC</td>
<td>Pharmacology-Allied Health (See Note 1)</td>
<td>2</td>
</tr>
<tr>
<td>ANCC</td>
<td>Health Law and Ethics (See Note 1)</td>
<td>2</td>
</tr>
<tr>
<td>ANAT</td>
<td>Introductory Anat &amp; Physiology</td>
<td>4</td>
</tr>
<tr>
<td>CHSE</td>
<td>Medical-Term Allied Health I (See Note 1)</td>
<td>2.5</td>
</tr>
<tr>
<td>CHSE</td>
<td>Medical-Term Allied Health II (See Note 1)</td>
<td>2.5</td>
</tr>
<tr>
<td>CHSE</td>
<td>Medical Insurance Billing I (See Note 1)</td>
<td>3</td>
</tr>
<tr>
<td>CHSE</td>
<td>Computers in Medical Office (See Note 1)</td>
<td>1</td>
</tr>
<tr>
<td>MEDI</td>
<td>MA Administrative/Communications</td>
<td>3</td>
</tr>
<tr>
<td>MEDI</td>
<td>Clinical Skills I</td>
<td>3</td>
</tr>
<tr>
<td>MEDI</td>
<td>Clinical Skills II</td>
<td>3</td>
</tr>
<tr>
<td>MEDI</td>
<td>Basic Medical Laboratory Proc</td>
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<tr>
<td>MEDI</td>
<td>Adv Medical Laboratory Proc</td>
<td>2</td>
</tr>
<tr>
<td>MEDI</td>
<td>Administrative Practicum</td>
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<tr>
<td>MEDI</td>
<td>Clinical Practicum</td>
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<tr>
<td>CADM</td>
<td>Medical Transcription (See Note 1)</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>
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<th>CREDIT HOURS</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Computer</td>
<td>2</td>
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<tr>
<td></td>
<td>CABS 102</td>
<td>Microcomputer for Non-Majors</td>
</tr>
<tr>
<td></td>
<td>CABS 119</td>
<td>Word for Windows</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL: 37 CREDITS

SUGGESTED COURSE SEQUENCE
Courses listed in Semester I below must be completed prior to admission to the Medical Assistant program as part of the Phase I requirements for admission. Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

<table>
<thead>
<tr>
<th>I</th>
<th>II</th>
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<tbody>
<tr>
<td>ANAT 145</td>
<td>ANCC 112</td>
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<tr>
<td>CHSE 121</td>
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<td>CHSE 125</td>
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<td>MEDI 100</td>
<td>MEDI 142</td>
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<tr>
<td>MEDI 131</td>
<td>OADM 267</td>
</tr>
<tr>
<td>MEDI 141</td>
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</tbody>
</table>

MULTI-SKILL PATIENT CARE TECH
CERTIFICATE OF COMPLETION

Curriculum Code: 0798 (Effective Fall 2000 - Summer 2005)

Students may enter this program from several health-care disciplines or with no health-care experience. Graduates are prepared to perform a variety of duties related to basic patient care at a level of trained, unlicensed personnel and are employed in the hospital setting. Clinical components will be provided in cooperation with various medical facilities.

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

INFORMATION
Contact the Human, Health and Public Service Careers Department, Gannon Vocational-Technical Center, Room 175, telephone (517) 483-1440.

REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANCC</td>
<td>EKG for Health Care Providers</td>
<td>1</td>
</tr>
<tr>
<td>ANCC</td>
<td>Health Law and Ethics</td>
<td>2</td>
</tr>
<tr>
<td>CHSE</td>
<td>Acute Care Nurse Aide/Orderly</td>
<td>6</td>
</tr>
<tr>
<td>CHSE</td>
<td>Medical Term Allied Health I</td>
<td>2.5</td>
</tr>
<tr>
<td>CHSE</td>
<td>Phlebotomy Technician</td>
<td>2</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL: 13.5 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></th>
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</tr>
</thead>
<tbody>
<tr>
<td>ANCC 111</td>
<td>ANCC 111</td>
</tr>
<tr>
<td>CHSE 101</td>
<td>CHSE 143</td>
</tr>
<tr>
<td>CHSE 121</td>
<td></td>
</tr>
</tbody>
</table>

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

Curriculum Code: 0235 (Effective Fall 2000-Summer 2001)

The Practical Nursing Program at Lansing Community College implements the ladder concept. There are specific prerequisites required for entry into the program. Building on these prerequisites, a student completing the first year receives a Certificate of Achievement and is eligible to take a national examination for Licensed Practical Nurse (LPN).

The Licensed Practical Nurse (LPN) Program prepares an individual to, with supervision from the Registered Nurse, implement a plan of care for clients in a variety of health care settings. The education and scope of practice of the LPN is determined by state law. Successful completion of the National Council 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 only open to students officially admitted to the Nursing Program.

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

INFORMATION
The admission and/or graduation requirements for this program may change each academic year. The program requirements below apply only to those students who have been admitted to the program for the 2000/2001 academic year. For the most recent and complete information, interested students should contact the Admissions Office, Room 2200, Gannon Vocational-Technical Center, telephone (517) 483-1254.

REQUIREMENTS FOR ADMISSION TO THE NURSING PROGRAM, LPN AND RN OPTIONS
For current information about admission requirements, students must contact the Admissions Office, Room 2200, Gannon Vocational-Technical Center, telephone (517) 483-1254.

REQUIREMENTS

CODE| TITLE| CREDIT HOURS
---|---|---
ANAT 201| Human Anatomy| 4
NURS 150| Fundamentals in Nursing Care (See Note 1)| 9
NURS 160| Acute Nursing Care| 6
NURS 165| Maternity Nursing Care| 5
NURS 200| Pharmacology (See Note 1)| 3
PFHW 163| Healthy Lifestyles| 2
PHGY 202| Human Physiology| 4
PSYC 200| Introduction to Psychology| 4
PSYC 205| Human Growth and Development| 3
WRIT 121| Composition I| 4

TOTAL: 44 CREDIT HOURS

MINIMUM TOTAL: 44

NOTES
1. NURS 200 may be taken up to 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 (EMS 102 or American Red Cross "Provider C").

SUGGESTED COURSE SEQUENCE
Courses listed in Semester I below must be completed prior to admission to the Nursing program as part of the Phase I requirements for admission. MATH 112 - Intermediate Algebra is also required for admission and may be waived by successfully passing a proficiency exam. Although students are admitted to the program in June, they will be assigned to begin Semester II in either fall or spring semester. A student may not begin a new semester until she or he has successfully completed all of the courses listed in a previous sequential semester. NURS 200 is the only NURS-prefix course that is offered summer semester.

<table>
<thead>
<tr>
<th>I</th>
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<tr>
<td>ANAT 201</td>
<td>NURS 150</td>
<td>NURS 160</td>
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<td>PFHW 163</td>
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<td>PHGY 202</td>
<td>PSYC 205</td>
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<tr>
<td>WRIT 121</td>
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</table>
NURSING, RN OPTION
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 9222 (Effective Fall 2000–Summer 2002)

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 degree and is eligible to take the national examination for Registered Nurse (RN).

The Registered Nurse (RN) Program prepares the individual to care for clients of all ages in a variety of health care settings. As an essential member of the health care team, the RN is responsible for developing, implementing, and evaluating a plan of care for clients. The RN is required to assist clients in achieving their health goals through effective communication, decision making, problem-solving, management, and technological skills. Registered nurses work in hospitals, clinics, offices, nursing homes, and home health care settings, in addition to schools, research facilities, and community agencies. The education and scope of practice of the RN is determined by state law. The student must successfully complete this program and the National Council Licensure Examination–Registered Nurse (NCLEX-RN).

This is a selective admission program. In order to be considered as a candidate for this program, students must meet basic admission requirements beyond those required for admission to the college. Many of the courses for this program are open only to students officially admitted to the Nursing Program.

PREREQUISITES
Students should see the Course Descriptions section of this catalog or the Course Schedule for course 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, students must complete specific course work in mathematics. For information on how to fulfill all general education requirements, see page 23.

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 2000/2001 academic year. For the most recent and complete information, interested students should contact the Admissions Office, Gannon Vocational-Technical Center, Room 2000, telephone number (517) 483-1254.

REQUIREMENTS FOR ADMISSION TO THE NURSING PROGRAM, LPN AND RN OPTIONS
For current information about admission requirements, students must contact the Admissions Office, Gannon Vocational-Technical Center, Room 2200, telephone number (517) 483-1254.

REQUIREMENTS

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<td>ANAT 201</td>
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<tr>
<td>MIRC 203</td>
<td>Microbiology</td>
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<tr>
<td>NURS 150</td>
<td>Fundamentals in Nursing Care (See Note 1)</td>
<td>9</td>
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<tr>
<td>NURS 160</td>
<td>Acute Nursing Care</td>
<td>6</td>
</tr>
<tr>
<td>NURS 165</td>
<td>Maternity Nursing Care</td>
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<tr>
<td>NURS 200</td>
<td>Pharmacology (See Note 1)</td>
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<tr>
<td>NURS 202</td>
<td>Mental Health Nursing Care</td>
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<tr>
<td>NURS 265</td>
<td>Pediatric Nursing Care</td>
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<tr>
<td>NURS 266</td>
<td>Advanced Chronic Nursing Care</td>
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<td>NURS 265</td>
<td>Advanced Acute Nursing Care</td>
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<td>NURS 290</td>
<td>Leadership in Nursing Care</td>
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<tr>
<td>PFHW 163</td>
<td>Healthy Lifetsyles</td>
<td>2</td>
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<td>PhGY 202</td>
<td>Human Physiology</td>
<td>4</td>
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<td>PSYC 200</td>
<td>Introduction to Psychology</td>
<td>4</td>
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<td>PSYC 205</td>
<td>Human Growth and Development</td>
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<tr>
<td>WRIT 121</td>
<td>Composition I</td>
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TOTAL: 68 CREDITS

LIMITED CHOICE REQUIREMENTS
TOTAL: 6 CREDITS

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

<table>
<thead>
<tr>
<th>CHOICE</th>
<th>DESCRIPTION</th>
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<td>General Education Core Areas (See the GENERAL EDUCATION section above)</td>
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<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>
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<td></td>
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<tr>
<td>Global Perspectives and Diversity Core Area</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)</td>
<td></td>
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</table>

MINIMUM TOTAL: 74

NOTES
1. NURS 206 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, MIRC 204 is strongly recommended to be taken concurrent with MIRC 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 (EMSG 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. (517) 483-1413.

SUGGESTED COURSE SEQUENCE
Courses listed in Semester I below must be completed prior to admission to the Nursing Program as part of the Phase I requirements for admission. MATH 112 - Intermediate Algebra is also required for admission and may be waived by successfully passing a proficiency exam. Although students are admitted to the program in June, they will be assigned to begin Semester II in either fall or spring semester. A student may not begin a new semester until she or he has successfully completed all of the courses listed in a previous sequenced semester. NURS 200 is the only NURS-prefix course that is offered during summer semester.

<table>
<thead>
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<th>I</th>
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<td>MIRC 203</td>
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<td>PFHW 163</td>
<td>NURS 202</td>
<td>NURS 165</td>
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<td>PSYC 200</td>
<td>PhGY 202</td>
<td>PSYC 205</td>
<td>NURS 265</td>
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<tr>
<td>NURS 280</td>
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<tr>
<td>NURS 285</td>
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<tr>
<td>NURS 290</td>
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<tr>
<td>Lim.Ch.</td>
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<tr>
<td>Lim.Ch.</td>
</tr>
</tbody>
</table>
### Paramedic Certificate of Achievement

**Curriculum Code:** 6272 (Effective Fall 2000 - Summer 2001)

This certificate program prepares the Basic EMT in advanced techniques of administering care in life-threatening conditions. Paramedics are employed by advanced life support ambulances and in emergency departments and critical care units of hospitals. State licensing is required.

This is a selective admission program. In order to be considered as a candidate for this program, students must meet basic admission requirements beyond those required for admission to the college. Many of the courses for this program are open only to students officially admitted to the Paramedic Program.

### Prerequisites

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

### Information

The admission and/or graduation requirements for this program may change each academic year. The program requirements below apply only to those students who have been admitted to the program for the 2000/2001 academic year. For the most recent and complete information, interested students should contact the Admissions Office, Gannon Vocational-Technical Center, Room 2200, telephone number (517) 483-1254.

### Requirements for Admission to the Paramedic Program

For current information about admission requirements, students must contact the Admissions Office, Gannon Vocational-Technical Center, Room 2200, telephone number (517) 483-1254.

### Requirements

<table>
<thead>
<tr>
<th>Code</th>
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<tbody>
<tr>
<td>PARA 221</td>
<td>Paramedic Medical Trauma I</td>
<td>4</td>
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<tr>
<td>PARA 222</td>
<td>Paramedic Medical Trauma II</td>
<td>4</td>
</tr>
<tr>
<td>PARA 231</td>
<td>Paramedic Cardiology I</td>
<td>2</td>
</tr>
<tr>
<td>PARA 232</td>
<td>Paramedic Cardiology II</td>
<td>2</td>
</tr>
<tr>
<td>PARA 241</td>
<td>Paramedic Pharmacology I</td>
<td>2</td>
</tr>
<tr>
<td>PARA 242</td>
<td>Paramedic Pharmacology II</td>
<td>2</td>
</tr>
<tr>
<td>PARA 251</td>
<td>Paramedic Skills I</td>
<td>2</td>
</tr>
<tr>
<td>PARA 252</td>
<td>Paramedic Skills II</td>
<td>2</td>
</tr>
<tr>
<td>PARA 261</td>
<td>Paramedic Clinical I</td>
<td>3</td>
</tr>
<tr>
<td>PARA 262</td>
<td>Paramedic Clinical II</td>
<td>4</td>
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<tr>
<td>PARA 263</td>
<td>Paramedic Internship</td>
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<tr>
<td>PFHW 111</td>
<td>Emergency Services Fitness III</td>
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<tr>
<td>PFHW 112</td>
<td>Emergency Services Fitness IV</td>
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**Minimum Total:** 32

### Note

1. Complete each course required with a minimum 3.0 grade or better in order to earn a Certificate of Achievement in the Paramedic Program.

### Suggested Course Sequence

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

<table>
<thead>
<tr>
<th>Para 221</th>
<th>Para 222</th>
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<tbody>
<tr>
<td>PARA 231</td>
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<td>PARA 241</td>
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<td>PARA 261</td>
<td>PARA 262</td>
</tr>
<tr>
<td>PFHW 111</td>
<td>PFHW 112</td>
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</tbody>
</table>
RADIOLOGIC TECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 0196 (Effective Fall 2000 - Summer 2003)

Radiologic technologists, also called radiographers, operate X-ray equipment under the direction of a physician, taking radiographs of internal parts of the body. Most often radiologic technologists are employed in hospitals, clinics and physician offices. Graduates of the program will be eligible for examination by the American Registry of Radiologic Technologists (ARRT). Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

This is a selective admission program. In order to be considered as a candidate for this program, students must meet basic admission requirements beyond those required for admission to the college. Many of the courses for this program are open only to students officially admitted to the Radiologic Technology Program.

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

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics. For information on how to fulfill all general education requirements, see page 23.

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 2000/2001 academic year.

For the most recent and complete information, interested students should contact the Admissions Office, Gannon Vocational-Technical Center, Room 2206, 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 2206, telephone number (517) 483-1254.

REQUIREMENTS

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<th>Course</th>
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<tbody>
<tr>
<td>AHCC 104</td>
<td>Patient Care Principles</td>
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<tr>
<td>ANAT 201</td>
<td>Human Anatomy</td>
<td>4</td>
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<tr>
<td>CABS 102</td>
<td>Microprocessors for Non-Majors</td>
<td>2</td>
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<tr>
<td>IRXT 100</td>
<td>Introduction to Imaging</td>
<td>4</td>
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<tr>
<td>IRXT 111</td>
<td>Radiographic Positioning I</td>
<td>5</td>
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<tr>
<td>IRXT 112</td>
<td>Radiographic Positioning II</td>
<td>4</td>
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<td>IRXT 113</td>
<td>Additional RAO Procedures</td>
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<tr>
<td>IRXT 114</td>
<td>Cross-Sectional Anatomy</td>
<td>3</td>
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<tr>
<td>IRXT 121</td>
<td>Radiographic Exposure I</td>
<td>3</td>
</tr>
<tr>
<td>IRXT 122</td>
<td>Radiographic Exposure II</td>
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</tr>
<tr>
<td>IRXT 151</td>
<td>Radiologic Physics</td>
<td>3</td>
</tr>
<tr>
<td>IRXT 192</td>
<td>Radiobiology and Protection</td>
<td>2</td>
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<tr>
<td>IRXT 200</td>
<td>Intro/Radiologic Pathology</td>
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<tr>
<td>IRXT 202</td>
<td>Clinical Practice I</td>
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<td>IRXT 204</td>
<td>Clinical Practice II</td>
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<tr>
<td>IRXT 210</td>
<td>Radiology Career Management</td>
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<tr>
<td>IRXT 214</td>
<td>Comprehensive Experience I</td>
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<tr>
<td>IRXT 215</td>
<td>Comprehensive Experience II</td>
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<tr>
<td>IRXT 219</td>
<td>Imaging Update</td>
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</tr>
<tr>
<td>IRXT 236</td>
<td>Comprehensive Experience III</td>
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<tr>
<td>PHGY 202</td>
<td>Human Physiology</td>
<td>4</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

- Writing Core Area
  - CABS 102
  - IRXT 100
  - IRXT 111
  - PHGY 202

- Speech Communication Core Area
  - IRXT 112

- Science/Technology Core Area (See Note 1)
  - IRXT 121

- Global Perspectives and Diversity Core Area
  - IRXT 213

Mathematics Competency (See page 25 for information on how to fulfill this requirement. Course work may be needed.)

MINIMUM TOTAL

76

NOTE

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

SUGGESTED COURSE SEQUENCE

Courses listed in Semester I below must be completed prior to admission to the Radiologic Technology Program as part of the Phase I requirements for admission. MATH 112-Intermediate Algebra is also required for admission and may be waived by successfully passing the MATH 112 proficiency exam. The program admits students in the fall semester only. Students who for any reason are unable to follow the course sequence suggested below (for example, those who have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

Semester I

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<td>IRXT 100</td>
<td>Introduction to Imaging</td>
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<tr>
<td>IRXT 111</td>
<td>Radiographic Positioning I</td>
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<tr>
<td>IRXT 112</td>
<td>Radiographic Positioning II</td>
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<td>IRXT 113</td>
<td>Additional RAO Procedures</td>
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<td>IRXT 114</td>
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<td>IRXT 121</td>
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<td>IRXT 151</td>
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Semester II

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<td>IRXT 100</td>
<td>Introduction to Imaging</td>
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<td>IRXT 111</td>
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<td>IRXT 113</td>
<td>Additional RAO Procedures</td>
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<td>IRXT 114</td>
<td>Cross-Sectional Anatomy</td>
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<tr>
<td>IRXT 121</td>
<td>Radiographic Exposure I</td>
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<td>IRXT 122</td>
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<tr>
<td>IRXT 151</td>
<td>Radiologic Physics</td>
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<tr>
<td>IRXT 192</td>
<td>Radiobiology and Protection</td>
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<td>IRXT 200</td>
<td>Intro/Radiologic Pathology</td>
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<td>Clinical Practice I</td>
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<td>Radiology Career Management</td>
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<td>IRXT 214</td>
<td>Comprehensive Experience I</td>
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<td>IRXT 215</td>
<td>Comprehensive Experience II</td>
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<td>IRXT 219</td>
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<td>PHGY 202</td>
<td>Human Physiology</td>
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Students are responsible for completing all requirements as stated. The only official documentation of program completion status is an audit conducted by the Registrar's Office that is initiated when students apply for a degree or certificate. Students are expected to apply one semester prior to the semester they intend to graduate.
**SURGICAL TECHNOLOGY CERTIFICATE OF ACHIEVEMENT**

Curriculum Code: 0216 (Effective Fall 2000 - Summer 2001)

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 sterile areas and instruments for use, assisting with surgical draping, gowning and gloving, and handling 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 or obstetrical delivery room. The surgical technologist may become certified through a national exam offered by the Association of Surgical Technologists.

This is a selective admission program. In order to be considered as a candidate for this program, students must meet basic admission requirements beyond those required for admission to the college. Many of the courses for this program are open only to students officially admitted to the Surgical Technology Program.

**PREREQUISITES**

Students should see the Course Descriptions section of this catalog or the Course Schedule for course prerequisite information. Basic skills assessment and advising information may be found on page 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 2000/2001 academic year. For the most recent and complete information, interested students should contact the Admissions Office, Gannon Vocational-Technical Center, Room 2200, telephone number (517) 483-1254.

**REQUIREMENTS FOR ADMISSION TO THE SURGICAL TECHNOLOGY PROGRAM**

For current information about admission requirements, students must contact the Admissions Office, Gannon Vocational-Technical Center, Room 2200, telephone number (517) 483-1254.

**REQUIREMENTS**

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<td>AHCC 110</td>
<td>Pharmacology-Allied Health (See Note 1)</td>
<td>2</td>
</tr>
<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 Anat &amp; Physiology</td>
<td>4</td>
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<tr>
<td>CHSE 121</td>
<td>Medical Term Allied Health I</td>
<td>2.5</td>
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<tr>
<td>SURG 100</td>
<td>Fundamental Surgical Tech</td>
<td>3</td>
</tr>
<tr>
<td>SURG 101</td>
<td>The Surgical Patient</td>
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<td>SURG 103</td>
<td>Surgical Aspects (See Note 1)</td>
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<td>SURG 104</td>
<td>Operative Procedures</td>
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<td>SURG 121</td>
<td>Applied Surg Techniques I</td>
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<td>Applied Surg Techniques II</td>
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<td>SURG 123</td>
<td>Applied Surg Techniques III</td>
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<td>SURG 124</td>
<td>Applied Surg Techniques IV</td>
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<td><strong>MINIMUM TOTAL</strong></td>
<td></td>
<td><strong>36.5</strong></td>
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</table>

**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**

Courses listed in Semester I below must be completed prior to admission to the Surgical Technology program as part of the Phase I requirements for admission. Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact an academic advisor or counselor for help with adjustments.

<table>
<thead>
<tr>
<th>I</th>
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<tr>
<td>ANAT 145</td>
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<td>CHSE 121</td>
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</table>

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HEATING, AC & REFRIGERATION ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 0161 (Effective Fall 2000–Summer 2005)

HEATING, Ventilation, Air Conditioning/Refrigeration technicians (HVAC/R) 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 commercial, industrial and institutional environments. HVAC/R technicians must have strong mechanical and electrical skills, be self-motivated, willing to accept challenges, and have a broad knowledge of the construction trades. HVAC/R technicians are employed by HVAC/R 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 Course Schedule for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION
General education is an important part of this program and includes a mathematics competency requirement. To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics. For information on how to fulfill all general education requirements, see page 23.

INFORMATION
Contact the Technology Careers Department, Gannon Vocational-Technical Center, Room 136, telephone number (517) 483-1396.

REQUIREMENTS

<table>
<thead>
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<th>CODE</th>
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<td>2</td>
</tr>
<tr>
<td>HVAC 120</td>
<td>Heating I</td>
<td>4</td>
</tr>
<tr>
<td>HVAC 130</td>
<td>Air Conditioning I</td>
<td>4</td>
</tr>
<tr>
<td>HVAC 201</td>
<td>Mechanical Code</td>
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</tr>
<tr>
<td>HVAC 211</td>
<td>Schematics</td>
<td>3</td>
</tr>
<tr>
<td>HVAC 220</td>
<td>Heating II</td>
<td>4</td>
</tr>
<tr>
<td>HVAC 221</td>
<td>Introduction to Hydronics</td>
<td>3</td>
</tr>
<tr>
<td>HVAC 230</td>
<td>Air Conditioning II</td>
<td>4</td>
</tr>
<tr>
<td>HVAC 231</td>
<td>Heat Pump</td>
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<td>HVAC 240</td>
<td>Refrigeration I</td>
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<td>HVAC 241</td>
<td>Refrigeration II</td>
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</tr>
<tr>
<td>HVAC 250</td>
<td>Pneumatic Control</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)

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

Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)

CHOICE 2: Technical Related

<table>
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<tr>
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<th>TITLE</th>
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<td>BLDT 121</td>
<td>Residential Framing</td>
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<tr>
<td>BLDT 281</td>
<td>International Code</td>
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</tr>
<tr>
<td>CNCP 101</td>
<td>PC Applications for Technology</td>
<td>3</td>
</tr>
<tr>
<td>COOP 210</td>
<td>Cooperative Education (Tech)</td>
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<tr>
<td>WELD 100</td>
<td>Combination Welding</td>
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</table>

MINIMUM TOTAL: 59 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 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>HVAC 100</td>
<td>HVAC 111</td>
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<td>HVAC 251</td>
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<td>HVAC 105</td>
<td>HVAC 120</td>
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<td>HVAC 221</td>
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<td>HVAC 110</td>
<td>HVAC 130</td>
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<td>Lim.Ch.</td>
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<td>Lim.Ch.</td>
<td>Lim.Ch.</td>
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<td>HVAC 250</td>
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HEATING AND AIR CONDITIONING CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 0143 (Effective Fall 2000–Summer 2005)

Students receive instruction on how to install, service and maintain heating, air conditioning and refrigeration systems, including sheet metal and electrical, to prepare them for an entry-level position.

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

INFORMATION
Contact the Technology Careers Department, Gannon Vocational-Technical Center, Room 136, telephone number (517) 483-1396.

REQUIREMENTS

<table>
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<td>HVAC 110</td>
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<tr>
<td>HVAC 111</td>
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</tr>
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<td>HVAC 120</td>
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<td>HVAC 250</td>
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</table>

MINIMUM TOTAL: 42 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.

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<tr>
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<td>HVAC 110</td>
<td>HVAC 130</td>
<td>HVAC 230</td>
<td>HVAC 250</td>
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HOTEL-MOTEL/FOOD MANAGEMENT ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 0711 (Effective Fall 2000–Summer 2005)

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. Explores 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 seek an academic advisor or counselor before enrolling in any course.

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

GENERAL EDUCATION
General education is an important part of this program and includes a mathematics competency requirement. To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics. For information on how to fulfill all general education requirements, see page 23.

INFORMATION
Contact the Business Careers Department, Old Central Building, Room 210, telephone number (517) 489-1522.

REQUIREMENTS

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<td>CABS 110</td>
<td>Microsoft Office</td>
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<tr>
<td>CISB 200</td>
<td>Info Sys Tech/Problem Solving</td>
<td>3</td>
</tr>
<tr>
<td>HMFS 101</td>
<td>Intro Hospitality/Tourism</td>
<td>3</td>
</tr>
<tr>
<td>HMFS 110</td>
<td>Sanitation and Safety</td>
<td>3</td>
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<td>Food and Beverage Management</td>
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<tr>
<td>HMFS 190</td>
<td>Internship and Seminar</td>
<td>3</td>
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<tr>
<td>HMFS 204</td>
<td>Hospitality HR Management</td>
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<td>HMFS 205</td>
<td>Hospitality Management</td>
<td>3</td>
</tr>
<tr>
<td>HMFS 215</td>
<td>Hospitality Sales/Marketing</td>
<td>3</td>
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<tr>
<td>HMFS 232</td>
<td>Food and Labor Cost Control</td>
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<td>MGMT 150</td>
<td>Managing Customer Relations</td>
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<tr>
<td>SPCH 110</td>
<td>Oral Communic in the Workplace</td>
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</tr>
<tr>
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LIMITED CHOICE REQUIREMENTS

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<td>2</td>
<td>Specialization (Choose one subchoice)</td>
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Subchoice 2A: Hotel-Motel Management Specialist

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<th>Code</th>
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<tbody>
<tr>
<td>HMFS 203</td>
<td>Hospitality Law</td>
<td>3</td>
</tr>
<tr>
<td>HMFS 205</td>
<td>Rooms Division Management</td>
<td>3</td>
</tr>
<tr>
<td>HMFS 229</td>
<td>Convention/Meeting Management</td>
<td>3</td>
</tr>
<tr>
<td>HMFS 240</td>
<td>Current Topics in Hospitality</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 228</td>
<td>Organizational Behavior</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 239</td>
<td>Time and Stress Management</td>
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Subchoice 2B: Food Management Specialist

<table>
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<tr>
<td>HMFS 132</td>
<td>Food Production</td>
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<tr>
<td>HMFS 135</td>
<td>Hospitality Purchasing</td>
<td>3</td>
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<tr>
<td>HMFS 170</td>
<td>Menu Management and Design</td>
<td>3</td>
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<tr>
<td>MGMT 228</td>
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</tbody>
</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>
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<tbody>
<tr>
<td>CABS 110</td>
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<td>HMFS 101</td>
<td>Hospitality Purchasing</td>
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</tr>
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</tr>
<tr>
<td>SPCH 110</td>
<td>Oral Communic in the Workplace</td>
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<td>WRIT 127</td>
<td>Business Writing</td>
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</tr>
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Students are responsible for completing all requirements as stated. The only official documentation of program completion status is an audit conducted by the Registrar's Office that is initiated when students apply for a degree or certificate. Students are expected to apply one semester prior to the semester they intend to graduate.

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# Human Services Careers

## Child Development Associate in Applied Science

**Curriculum Code:** 0108 (Effective Fall 2000–Summer 2005)

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 care 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 Course Schedule for course prerequisite information. Basic skills assessment and advisering information may be found on page 28 of this catalog.

## General Education

General education is an important part of this program and includes a mathematics competency requirement. To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics. For information on how to fulfill all general education requirements, see page 29.

### Information

Contact the Human, Health, and Public Service Careers Department, Gannon Vocational-Technical Center, Room 175, telephone number (517) 483-1410.

### Requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tr>
<td>CHDV 101</td>
<td>Child Growth/Dev: 0-5 Years</td>
<td>4</td>
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<tr>
<td>CHDV 111</td>
<td>Child Guidance/Communication</td>
<td>4</td>
</tr>
<tr>
<td>CHDV 112</td>
<td>Family Relationships/Child Care</td>
<td>2</td>
</tr>
<tr>
<td>CHDV 113</td>
<td>Health/Safety Issue: Child Care</td>
<td>2</td>
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<tr>
<td>CHDV 220</td>
<td>Preschool Curriculum</td>
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<td>CHDV 221</td>
<td>Infant-Toddler Program Dev</td>
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<td>CHDV 222</td>
<td>School-Age Child Care Program Dev</td>
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<td>CHDV 230</td>
<td>Child Care Center Admin</td>
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<td>CHDV 284</td>
<td>Child Development Practicum (See Note 1)</td>
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<td>ISCI 121</td>
<td>Intgrated Sci for Education I</td>
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<td>SDE 100</td>
<td>Social Science</td>
<td>4</td>
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<tr>
<td>WRIT 122</td>
<td>Composition II</td>
<td>4</td>
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</table>

**Total Credits:** 44

### Limited Choice Requirements

**Total Credits:** 22

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

**Choice 1:** General Education Core Areas

- Writing Core Area (See Note 2) | 3 Credits
- Speech Communication Core Area | 3 Credits
- Science/Technology Core Area (See Note 2) | 3 Credits
- Global Perspectives and Diversity Core Area (See Note 2) | 3 Credits
- Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.) | 3 Credits

**Choice 2:** Social Science (See Note 3) | 4 Credits

**Choice 3:** Science/Mathematics (See Note 3) | 4 Credits

**Choice 4:** Humanities (See Note 3) | 8 Credits

**Choice 5:** Professional Related Courses (See Note 4) | 3 Credits

**EMSB 102** | CPR for Health Care Prof | 5
**EMSB 106** | Infant/Child CPR       | 2
**HUSE 100** | Introduction to Human Services          | 3
**HUSE 101** | Personal Dimensions/Human Serv          | 2
**HUSE 110** | Intro/Child Abuse and Neglect           | 3
**HUSE 112** | Introduction/Substance Abuse            | 3
**HUSE 120** | Introduction/Family Violence            | 2

**Minimum Total:** 65

### CDA Credential Training

#### Certificate of Completion

**Curriculum Code:** 0221 (Effective Fall 2000–Summer 2005)

The CDA (Child Development Associate) Credential is a national credential earned by individuals working with children age five and younger in a group child care setting. This certificate provides the training required for CDA credential assessment.

**Requirements**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHDV 101</td>
<td>Child Growth/Dev: 0-5 Years</td>
<td>4</td>
</tr>
<tr>
<td>CHDV 111</td>
<td>Child Guidance/Communication</td>
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<tr>
<td>CHDV 251</td>
<td>CDA Credential Preparation</td>
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</tbody>
</table>

**Total Credits:** 11

### Limited Choice Requirements

**Total Credits:** 3-4

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

**Choice 1:**

- CHDV 220 | Preschool Curriculum Program Dev | 3-4 Credits
- CHDV 222 | Infant-Toddler Program Dev       | 3-4 Credits

**Minimum Total:** 14

**Note**

1. Each course must be completed with a 2.0 minimum grade to be counted toward certificate completion.

### Suggested Course Sequence

Students should see course descriptions to find out which 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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<tr>
<td>CHDV 101</td>
<td>CHDV 111</td>
<td>CHDV 251</td>
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<td>CHDV 220</td>
<td>CHDV 221</td>
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<td>ISCI 121</td>
<td>CHDV 222</td>
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</table>

**Students are responsible for completing all requirements as stated. The only official documentation of program completion status is an audit conducted by the Registrar's Office.** 

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CHILD DEVELOPMENT
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 1123 (Effective Fall 2000–Summer 2005)

The certificate program consists of child development course work. It prepares individuals for positions as assistant teachers or teachers in child care programs. Courses for the certificate can be applied toward the associate degree. This curriculum requires three semesters to complete, not including summer.

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

INFORMATION
Contact the Human, Health and Public Service Careers Department, Gannon Vocational-Technical Center, Room 175, telephone number (517) 483-1410.

REQUIREMENTS

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<td>CNDV 112</td>
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<td>CNDV 220</td>
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<td>CNDV 230</td>
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<td>WRT 121</td>
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</table>

LIMITED CHOICE REQUIREMENTS

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

CHOICE 1: Professional Related Courses (See Note 2) 3 Credits

RMSB 102 | 0.5 | CPR for Health Care Prof |
EMBR 108 | 2.5 | Infant/Child CPR |
HUSE 100 | 3 | Introduction to Human Services |
HUSE 101 | 2 | Personal Dimensions/Human Serv |
HUSE 110 | 3 | Intro/Child Abuse and Neglect |
HUSE 112 | 3 | Intro/Substance Abuse |
HUSE 129 | 2 | Introduction/Family Violence |

MINIMUM TOTAL

35

NOTES

1. CNDV 201 requires departmental approval. Applications must be submitted one semester in advance to be admitted to CNDV 201. Applications for departmental approval are available in the Human, Health and Public Service Careers Department, Gannon Vocational-Technical Center, Room 175.

2. Students may also choose from CNDV-prefix courses not already used to meet degree requirements.

3. CNDV 111 and CNDV 220 must be completed with a minimum 2.5 grade or better. Other required CNDV 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 credits 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>WRT 121</td>
<td>CNDV 211</td>
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GERONTOLOGY
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 0152 (Effective Fall 2000–Summer 2005)

The certificate program consists of courses in aging and human services. It is designed for persons who have achieved a degree and wish to focus their skills in gerontology. Two semesters of field placement are included. It takes four semesters to complete this curriculum, not including summers.

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

INFORMATION
Contact the Human, Health and Public Service Careers Department, Gannon Vocational-Technical Center, Room 175, telephone number (517) 483-1410.

REQUIREMENTS

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<td>GERO 203</td>
<td>3</td>
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<td>GERO 222</td>
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<td>GERO 284</td>
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<td>HUSE 100</td>
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<td>HUSE 101</td>
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<td>SOWK 203</td>
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</tr>
<tr>
<td>WRT 121</td>
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</table>

LIMITED CHOICE REQUIREMENTS

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

CHOICE 1: Professional Related Courses (See Note 2) 3 Credits

MINIMUM TOTAL

32

NOTES

1. There is an application process and guidelines for admission into field placement/practicum. Students should meet with a program advisor to assist in developing a plan to meet all field placement prerequisites. Field placement applications are due by April 1 for admission to Fall field placement. Application packets with current requirements are available beginning in January from the Human, Health and Public Service Careers Department, Gannon Vocational-Technical Center, Room 175. Contact a program advisor for further information.

2. Students may choose from any GERO-prefix courses numbered GERO 126-158.

3. All required GERO, HUSE, and SOWK courses must be completed with a minimum 2.5 grade or better for this certificate.

SUGGESTED COURSE SEQUENCE

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

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<td>GERO 282</td>
<td>Lim.Ch.</td>
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<td>HUSE 100</td>
<td>SOWK 203</td>
<td>Lim.Ch.</td>
<td>GERO 284</td>
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</table>
**HUMAN SERVICES ASSOCIATE IN APPLIED SCIENCE**

Curriculum Code: 0915 (Effective Fall 2000-Summer 2005)

Human Services is a field in which individuals work in social service agencies assisting professional staff to meet human needs. Responsibilities include helping individuals and families identify needs, cope with problems, and obtain services; leading group activities; and assisting individuals in meeting everyday living skills. Students choose from three areas of specialization. Gerontology studies the process of aging and prepares individuals to work with older adults and their families. The Substance Abuse area prepares individuals to work in agencies with a substance abuse prevention or treatment component. The Family Emphasis area focuses on various family situations and prepares individuals to work in a wide range of family and youth agencies. Two consecutive semesters of field work during the last year provide work-site experience. Some transfer opportunities exist; however, not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

**PREREQUISITES**

Students should see the Course Descriptions section of this catalog or the Course Schedule for course prerequisite information. Basic skills assessment and advising information may be found on page 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, students may need to complete specific course work in mathematics. For information on how to fulfill all general education requirements, see page 23.

**INFORMATION**

Contact the Human, Health and Public Service Careers Department, Gannon Vocational Technical Center, Room 175, telephone number (517) 463-1410.

**REQUIREMENTS**

**CREDITS**

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<td>Introduction to Human Services</td>
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<td>Personal Dimensions/Human Service</td>
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<td>Introduction/Social Services</td>
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<td>SOCL 120</td>
<td>Introduction to Sociology</td>
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<td>SOWK 203</td>
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<td>SPCH 120</td>
<td>Dynamics of Communication</td>
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<td>WRIT 121</td>
<td>Composition 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 Area
(See the GENERAL EDUCATION section above)

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| Writing Core Area (See Note 1) |
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**CHOICE 3: Humanities (See Note 3)**

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**CHOICE 4: Specialization (Choose one subchoice)**

20 Credits

**SUBCHASE 5A: Gerontology (See Note 4)**

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<td>Physical/Mental Health Aging</td>
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**SUBCHASE 5B: Substance Abuse**

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<td>HUSE 241</td>
<td>Substance Abuse Prevention</td>
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<td>HUSE 242</td>
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<td>HUSE 244</td>
<td>Substance Abuse: Treatment, Invry</td>
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<td>HUSE 268</td>
<td>Substance Abuse Practicum I</td>
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**SUBCHASE 5C: Family Emphasis (See Note 5)**

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<td>SOCL 254</td>
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<td>SOCL 260</td>
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**MINIMUM TOTAL**

69

**NOTES**

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

2. Students must select a four-credit General Education Science/Technology Core course that will also satisfy the Science/Mathematics transfer requirement for MACRAO. See the MACRAO Transfer Agreement in the Transfer Information section of this catalog.

3. See the MACRAO Transfer Agreement in the Transfer Information section of this catalog for appropriate humanities courses.

4. In addition to the courses listed in Subchoice 5A, students must also complete three credits of departmentally approved GERO electives and three credits of HUSE electives that are not already used to meet degree requirements. Students must consult with a Human Services Program Advisor regarding course selection.

5. There is an application process and guidelines for admission into the field placement component. Students should meet with a program advisor to develop a plan to meet all field work prerequisites. Applications are due by April 1 for admission to fall field placement. Application packets with current requirements are available beginning in January from the Human, Health and Public Service Careers Department, Gannon Vocational Technical Center, Room 175. See a Human Services Program Advisor for further information.

6. In addition to the courses listed in Subchoice 5C, students must also complete six credits of departmentally approved Human Services area courses that are not already used to meet degree requirements. Students must consult with a Human Services Program Advisor regarding course selection.

7. All HUSE, GERO, and SOWK courses used toward this degree must be completed with a minimum 2.5 grade point average.

**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>
```
**SUBSTANCE ABUSE**

**CERTIFICATE OF ACHIEVEMENT**

**Curriculum Code:** 0239 (Effective Fall 2000–Summer 2005)

A substance abuse worker is an individual with specialized knowledge and skills in the area of substance abuse, including its causes, treatment, and prevention strategies. The certificate is designed for individuals who have achieved a degree and wish to focus their skills in the substance abuse area. Two semesters of field work are required. It takes five semesters to complete this curriculum.

**PREREQUISITES**

Students should see the Course Descriptions section of this catalog or the Course Schedule for course prerequisite information. Basic skills assessment and advising information may be found on page 9 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>
<thead>
<tr>
<th>REQUIREMENTS</th>
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<tr>
<td>CODE</td>
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<tr>
<td>HUSE 100</td>
<td>Introduction to Human Services</td>
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<tr>
<td>HUSE 101</td>
<td>Personal Dimensions/Human Serv</td>
</tr>
<tr>
<td>HUSE 112</td>
<td>Introduction/Substance Abuse</td>
</tr>
<tr>
<td>HUSE 240</td>
<td>Substance Abuse: Spec Pop/Adol</td>
</tr>
<tr>
<td>HUSE 241</td>
<td>Substance Abuse Prevention</td>
</tr>
<tr>
<td>HUSE 242</td>
<td>Chemically Dependent Family</td>
</tr>
<tr>
<td>HUSE 244</td>
<td>Sub Abuse Treatment, Intrv</td>
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<tr>
<td>HUSE 266</td>
<td>Substance Abuse Practicum I <em>(See Note 1)</em></td>
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<td>HUSE 268</td>
<td>Substance Abuse Practicum II</td>
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<tr>
<td>SOWK 203</td>
<td>Social Work Interviewing</td>
</tr>
<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/practicum component. Students should meet with a program advisor to develop a plan to meet all field work prerequisites. Applications are due by April 1 for admission to Fall field placement. Application packets with current requirements are available beginning in January from the Human, Health and Public Service Careers Department, Gannon Vocational-Technical Center, Room 175. Contact a program advisor for further information.

2. All required HUSE and SOWK courses must be completed with a minimum 2.5 grade or better.

3. Students should plan to begin this curriculum summer semester.

**SUGGESTED COURSE SEQUENCE**

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

<table>
<thead>
<tr>
<th>I</th>
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<tr>
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<td>HUSE 100</td>
<td>HUSE 240</td>
<td>HUSE 266</td>
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<tr>
<td>WRIT 121</td>
<td>HUSE 101</td>
<td>HUSE 241</td>
<td>HUSE 244</td>
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<td></td>
<td>HUSE 242</td>
<td>SOWK 203</td>
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<td></td>
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<tr>
<td></td>
<td>HUSE 268</td>
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</table>
INDUSTRIAL

CNC PROGRAMMING
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 0265 (Effective Fall 2000-Summer 2005)

Program Description
Computer numerical control programmers are responsible for writing programs that are used to control automated manufacturing systems and equipment. The programmer is primarily concerned with taking engineering specifications and developing procedures and programmed instructions to manufacture requested components. The CNC programmer must be knowledgeable in many areas such as computer systems, CAD, CAM, manufacturing processes, machine tools and metallurgy. Strong math, communication and problem-solving skills are needed in order to manage the large and diverse amount of information that must be brought together in order to successfully write programs. Because of their many skills, CNC programmers are employed in all industries, including aerospace, textile, agriculture, electronics, and manufacturing.

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

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

INFORMATION
Contact the Technology Careers Department, Cannon Vocational-Technical Center, Room 136, telephone number (517) 483-1356.

REQUIREMENTS

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<td>CNCP 120</td>
<td>Machine Controls and Setup</td>
<td>4</td>
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<td>CNCP 200</td>
<td>Unigraphics NC</td>
<td>4</td>
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<td>CNCP 210</td>
<td>Mastercam</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>CNCP 215</td>
<td>Generative Machining</td>
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<td>DTDS 190</td>
<td>Unigraphics I</td>
<td>4</td>
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<td>MACH 105</td>
<td>Machine Tool Survey</td>
<td>3</td>
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</tr>
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<td>MACH 110</td>
<td>Machine Tool Technology I</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>MACH 111</td>
<td>Machine Tool Technology II</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>MACH 120</td>
<td>Effect Use Machinery Handbook</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>MACH 135</td>
<td>Metallurgy and Heat Treat</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>MACH 140</td>
<td>Tooling Theory and Practices</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>WRIT 124</td>
<td>Technical Writing</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

- Writing Core Area (See Note 1) 6 Credits
- Speech Communication Core Area 3 Credits
- Science/Technology Core Area 3 Credits
- Global Perspectives and Diversity Core Area 3 Credits
- Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.) 3-4 Credits

CHOICE 2: Drafting

- PC Applications for Technology 3 Credits
- Cooperative Education (Tech) 3 Credits
- Drafting I 4 Credits
- Descriptive Geometry 4 Credits
- Industrial Blueprint Reading 3 Credits
- AutoCAD Basic 2-D 4 Credits
- IDEAS 4 Credits
- Unigraphics I 4 Credits

MINIMUM TOTAL 82 Credits

NOTE

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

SUGGESTED COURSE SEQUENCE

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

<table>
<thead>
<tr>
<th>I</th>
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<td>MACH 105</td>
<td>CNCP 110</td>
<td>CNCP 120</td>
<td>CNCP 200</td>
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<td>WRIT 124</td>
<td>MACH 110</td>
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<td>CNCP 215</td>
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<td>MACH 111</td>
<td>DTDS 150</td>
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<td>MACH 135</td>
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<td>Lim.Ch.</td>
<td>MACH 140</td>
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STUDENTS ARE RESPONSIBLE FOR COMPLETING ALL REQUIREMENTS AS STATED. THE ONLY OFFICIAL DOCUMENTATION OF PROGRAM COMPLETION STATUS IS AN AUDIT CONDUCTED BY THE REGISTRAR'S OFFICE THAT IS INITIATED WHEN STUDENTS APPLY FOR A DEGREE OR CERTIFICATE. STUDENTS ARE EXPECTED TO APPLY ONE SEMESTER PRIOR TO THE SEMESTER THEY INTEND TO GRADUATE.

LANSING COMMUNITY COLLEGE CATALOG 2000-2001 119
INDUSTRIAL TECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 0110 (Effective Fall 2000–Summer 2005)

Industrial technology is the study of a variety of technologies used in today's industry. Physical and mental skills are required including mechanical skills, problem-solving abilities, and dexterity. Employment opportunities are with industries that have a variety of work processes and/or trades.

PREREQUISITES
Students should see the Course Descriptions section of this catalog or the Course Schedule for course prerequisite information. Basic skills assessment and advising information may be found on page 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, students may need to complete specific course work 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 105, telephone number (517) 483-1336.

REQUIREMENTS

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<td>DTDS 110</td>
<td>Industrial Blueprint Reading</td>
<td>3</td>
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<tr>
<td>EMTA 100</td>
<td>Medical First Responder</td>
<td>4</td>
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<tr>
<td>HVAC 110</td>
<td>Applied Electricity</td>
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<tr>
<td>MACH 100</td>
<td>Manufacturing Processes</td>
<td>4</td>
</tr>
<tr>
<td>MACH 105</td>
<td>Machine Tool Survey</td>
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</tr>
<tr>
<td>MACH 120</td>
<td>Effect Use Machinery Handbook</td>
<td>4</td>
</tr>
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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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<td>MATH 115</td>
<td>Technical Math II</td>
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<td>MFGM 101</td>
<td>Industrial Hydraulics</td>
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<td>PHYS 200</td>
<td>Applied Physics</td>
<td>4</td>
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<td>WELD 100</td>
<td>Combination Welding</td>
<td>4</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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Complete the indicated number of credits from each CHOICE listed below.

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

<table>
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<th>COURSE CODE</th>
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<td>Writing Core Area</td>
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<td>Speech Communication Core Area</td>
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<tr>
<td>Mathematics Competency</td>
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MINIMUM TOTAL 9

CHOICE 2: Technical Related

<table>
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<th>COURSE CODE</th>
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<td>MACH 140</td>
<td>Tooling Theory and Practices</td>
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<td>MACH 210</td>
<td>Print Electric Discharge Mach</td>
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<td>QUAL 121</td>
<td>Intro Statistical Process Cont</td>
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MINIMUM TOTAL 3–4

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

SUGGESTED COURSE SEQUENCE

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

<table>
<thead>
<tr>
<th>COURSE CODE</th>
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<td>HVAC 110</td>
<td>DTDS 110</td>
<td>MACH 115</td>
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<tr>
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<td>MACH 105</td>
<td>MFGM 101</td>
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<td>MATH 114</td>
<td>MACH 120</td>
<td>PHYS 200</td>
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<td>WELD 100</td>
<td>MATH 115</td>
<td>Lim.Ch.</td>
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<tr>
<td>WRIT 124</td>
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INDUSTRIAL TECHNOLOGY
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 0150 (Effective Fall 2000–Summer 2005)

This certificate provides students with a basic understanding of a variety of technologies to enhance the theory skills they already possess.

REQUIREMENTS

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<td>DTDS 110</td>
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<td>EMTA 100</td>
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<tr>
<td>MACH 100</td>
<td>Manufacturing Processes</td>
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<tr>
<td>MACH 120</td>
<td>Effect Use Machinery Handbook</td>
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</tr>
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<td>MACH 135</td>
<td>Metallurgy and Heat Treat</td>
<td>4</td>
</tr>
<tr>
<td>MATH 114</td>
<td>Technical Math I</td>
<td>4</td>
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LIMITED CHOICE REQUIREMENTS

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

CHOICE 1: Related Technology

<table>
<thead>
<tr>
<th>COURSE CODE</th>
<th>COURSE TITLE</th>
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<tbody>
<tr>
<td>CNCP 101</td>
<td>PC Applications for Technology</td>
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<td>MACH 105</td>
<td>Machine Tool Survey</td>
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<td>MFGM 101</td>
<td>Industrial Hydraulics</td>
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<tr>
<td>MFGM 110</td>
<td>Machine Maintenance I</td>
<td>4</td>
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<tr>
<td>PHYS 200</td>
<td>Applied Physics</td>
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<td>QUAL 107</td>
<td>Problem-Solving Techniques</td>
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<tr>
<td>WRIT 124</td>
<td>Technical Writing</td>
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MINIMUM TOTAL 12 Credits

SUGGESTED COURSE SEQUENCE

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

<table>
<thead>
<tr>
<th>COURSE CODE</th>
<th>COURSE TITLE</th>
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<td>MACH 100</td>
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<td>MATH 114</td>
<td>MACH 105</td>
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### MACHINE MAINTENANCE
#### ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 0173 (Effective Fall 2000–Summer 2005)

Machine maintenance technicians are involved with the repair, maintenance, and installation of industrial equipment. They repair the machinery of industry, solving mechanical problems. The skills necessary for this type of work are many and varied: critical thinking, problem solving, mechanics, math and physics are but a few. Maintenance technicians also need to know how to diagnose hydraulic problems, perform preventive maintenance procedures, and be able to work well with others. Every industrial plant will have one or more machine maintenance technicians. They may have different titles, but the work is the same.

### PREREQUISITES

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

### GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics. For information on how to fulfill all general education requirements, see page 23.

### INFORMATION

Contact the Technology Careers Department, Gannon Vocational-Technical Center, Room 136, telephone number (517) 485-1336.

### REQUIREMENTS

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<td>Medical First Responder</td>
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<td>MACH 105</td>
<td>Machine Tool Survey</td>
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<td>MACH 110</td>
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<td>MFGM 101</td>
<td>Industrial Hydraulics</td>
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<td>Machine Maintenance I</td>
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<td></td>
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<td>MFGM 120</td>
<td>Industrial Presses</td>
<td>4</td>
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<tr>
<td>MFGM 125</td>
<td>Rigging</td>
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<tr>
<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)

- Writing Core Area (See Note 1)
- Speech Communication Core Area
- Science/Technology Core Area
- Global Perspectives and Diversity Core Area
- Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)

- 9 Credits

**CHOICE 2:** Electrical Technology

- ELTE 110 Practical Electricity
- HVAC 110 Applied Electricity

- 2–3 Credits

**CHOICE 3:** Technical Related

- MACH 100 Manufacturing Processes
- MACH 140 Tooling Theory and Practices
- MFGM 102 Industrial Pneumatics
- WELD 100 Combination Welding

- 3–4 Credits

**CHOICE 4:** Mathematics & Physics

- MATH 114 Technical Math I
- MATH 115 Technical Math II
- PHYS 200 Applied Physics

- 8 Credits

**MINIMUM TOTAL**

- 69

**NOTE**

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

**SUGGESTED COURSE SEQUENCE**

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

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<td>MACH 106</td>
<td>MACH 120</td>
<td>EMTA 100</td>
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### MACHINE REPAIR
CERFICATE OF ACHIEVEMENT

**Curriculum Code:** 0147 (Effective Fall 2000–Summer 2005)

This program provides technical knowledge and skills in the adjustment, maintenance, part replacement, and repair of tools, equipment and machines. It prepares an individual for an entry-level position.

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

**INFORMATION**
Contact the Technology Careers Department, Gannon Vocational-Technical Center, Room 136, telephone number (517) 483-1336.

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<td>3</td>
</tr>
<tr>
<td>EMTA</td>
<td>Medical First Responder</td>
<td>4</td>
</tr>
<tr>
<td>MACH</td>
<td>Machine Tool Survey</td>
<td>3</td>
</tr>
<tr>
<td>MATH</td>
<td>Technical Math I</td>
<td>4</td>
</tr>
<tr>
<td>MFGM</td>
<td>Industrial Hydraulics</td>
<td>4</td>
</tr>
<tr>
<td>MFGM</td>
<td>Machine Maintenance I</td>
<td>4</td>
</tr>
<tr>
<td>MFGM</td>
<td>Machine Maintenance II</td>
<td>4</td>
</tr>
<tr>
<td>MFGM</td>
<td>Rigging</td>
<td>2</td>
</tr>
<tr>
<td>WELD</td>
<td>Combination Welding</td>
<td>4</td>
</tr>
</tbody>
</table>

**MINIMUM TOTAL:** 32 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>
</tr>
</thead>
<tbody>
<tr>
<td>DTOS</td>
<td>EMTA</td>
</tr>
<tr>
<td>MACH</td>
<td>MFGM</td>
</tr>
<tr>
<td>MATH</td>
<td>MFGM</td>
</tr>
<tr>
<td>MFGM</td>
<td>WELD</td>
</tr>
</tbody>
</table>

### MILLWEIGHT
CERFICATE OF ACHIEVEMENT

**Curriculum Code:** 0154 (Effective Fall 2000–Summer 2005)

A millwright installs, maintains and cares for mechanical equipment in a plant, factory or mill. This program prepares an individual for an entry-level position.

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

**INFORMATION**
Contact the Technology Careers Department, Gannon Vocational-Technical Center, Room 136, telephone number (517) 483-1336.

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>BLDT</td>
<td>Structural Blueprint Reading</td>
<td>4</td>
</tr>
<tr>
<td>EMTA</td>
<td>Medical First Responder</td>
<td>4</td>
</tr>
<tr>
<td>MACH</td>
<td>Machine Tool Survey</td>
<td>3</td>
</tr>
<tr>
<td>MACH</td>
<td>Metallurgy and Heat Treat</td>
<td>4</td>
</tr>
<tr>
<td>MATH</td>
<td>Technical Math I</td>
<td>4</td>
</tr>
<tr>
<td>MFGM</td>
<td>Industrial Hydraulics</td>
<td>4</td>
</tr>
<tr>
<td>MFGM</td>
<td>Machine Maintenance I</td>
<td>4</td>
</tr>
<tr>
<td>MFGM</td>
<td>Machine Maintenance II</td>
<td>4</td>
</tr>
<tr>
<td>MFGM</td>
<td>Rigging</td>
<td>2</td>
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</table>

**LIMITED CHOICE REQUIREMENTS**

<table>
<thead>
<tr>
<th>III</th>
<th>TOTAL: 3-4 CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHOICE 1:</td>
<td>Building Related</td>
</tr>
<tr>
<td>BLDT 100</td>
<td>Introduction to Construction</td>
</tr>
<tr>
<td>BLDT 121</td>
<td>Residential Framing</td>
</tr>
<tr>
<td>CIVIL 120</td>
<td>Surveying</td>
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</table>

**MINIMUM TOTAL:** 36 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>
</tr>
</thead>
<tbody>
<tr>
<td>EMTA</td>
<td>BLDT</td>
<td>MFGM</td>
</tr>
<tr>
<td>MACH</td>
<td>MACH</td>
<td>MFGM</td>
</tr>
<tr>
<td>MATH</td>
<td>MFGM</td>
<td>MFGM</td>
</tr>
<tr>
<td>MFGM</td>
<td>MFGM</td>
<td>MFGM</td>
</tr>
</tbody>
</table>

**Students are responsible for completing all requirements as stated. The only official documentation of program completion status is an audit conducted by the Registrar's Office that is initiated when students apply for a degree or certificate. Students are expected to apply one semester prior to the semester they intend to graduate.**
MACHINIST TOOLMAKER
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 0199 (Effective Fall 2000–Summer 2005)

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. Machinists/toolmakers are capable of operating all the various machine tools in a machine shop. They also must be able to interpret mechanical drawings, calculate mathematical data, and work with others to solve the various problems related to projects going on in the shop at any given time. A machinist/toolmaker may be employed in any manufacturing facility.

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

GENERAL EDUCATION
General education is an important part of this program and includes a mathematics competency requirement. To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics. For information on how to fulfill all general education requirements, see page 23.

INFORMATION
Contact the Technology Careers Department, Gannon Vocational-Technical Center, Room 146, telephone number (517) 485-1336.

REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>TOTAL: 52 CREDITS</th>
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</thead>
<tbody>
<tr>
<td>CNCP 101</td>
<td>PC Applications for Technology</td>
<td>3</td>
</tr>
<tr>
<td>CNCP 110</td>
<td>Foundations of CNC Programming</td>
<td>4</td>
</tr>
<tr>
<td>DTDS 110</td>
<td>Industrial Blueprint Reading</td>
<td>4</td>
</tr>
<tr>
<td>EMFA 100</td>
<td>Medical First Responder</td>
<td>4</td>
</tr>
<tr>
<td>MACH 105</td>
<td>Machine Tool Survey</td>
<td>4</td>
</tr>
<tr>
<td>MACH 110</td>
<td>Machine Tool Technology I</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>
<td>4</td>
</tr>
<tr>
<td>MACH 120</td>
<td>Effect Use Machinery 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>Metallurgy and Heat Treat</td>
<td>4</td>
</tr>
<tr>
<td>MACH 140</td>
<td>Tooling Theory and Practice</td>
<td>4</td>
</tr>
<tr>
<td>MACH 210</td>
<td>Precision Electric Discharge Mach</td>
<td>4</td>
</tr>
<tr>
<td>WRIT 124</td>
<td>Technical Writing</td>
<td>3</td>
</tr>
</tbody>
</table>

LIMITED CHOICE REQUIREMENTS

| TOTAL: 17 CREDITS |

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

CHOICE 1: General Education Core Areas

<table>
<thead>
<tr>
<th>CREDITS</th>
<th>WRIT 336</th>
<th>Speech Communication Core Area</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>WC 101</td>
<td>Global Perspectives and Diversity Core Area</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>WC 111</td>
<td>Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)</td>
<td>3</td>
</tr>
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</table>

CHOICE 2: Mathematics

<table>
<thead>
<tr>
<th>CREDITS</th>
<th>MATH 114</th>
<th>Technical Math I</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MATH 115</td>
<td>Technical Math II</td>
<td>4</td>
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<tr>
<td></td>
<td>MATH 212</td>
<td>Compound Angles</td>
<td>4</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL: 69

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

SUGGESTED COURSE SEQUENCE

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

<table>
<thead>
<tr>
<th></th>
<th>II</th>
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<tbody>
<tr>
<td>EMFA 100</td>
<td>DTDS 110</td>
<td>CNCP 101</td>
<td>CNCP 110</td>
</tr>
<tr>
<td>MACH 105</td>
<td>MACH 110</td>
<td>MACH 111</td>
<td>MACH 112</td>
</tr>
<tr>
<td>MACH 120</td>
<td>MACH 125</td>
<td>MACH 140</td>
<td>MACH 130</td>
</tr>
<tr>
<td>Lim.Ch.</td>
<td>WRIT 124</td>
<td>Lim.Ch.</td>
<td>Lim.Ch.</td>
</tr>
<tr>
<td>Lim.Ch.</td>
<td>Lim.Ch.</td>
<td></td>
<td>Lim.Ch.</td>
</tr>
</tbody>
</table>

TOOL AND DIE MAKER CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 0141 (Effective Fall 2000–Summer 2005)

This program provides technical knowledge and skills to operate machine tools used in the forming of metal components, as well as the fabrication of special tools, dies, jigs, and fixtures used in cutting, working, and finishing metal components. It prepares an individual for an entry-level position.

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

INFORMATION
Contact the Technology Careers Department, Gannon Vocational-Technical Center, Room 146, telephone number (517) 485-1336.

REQUIREMENTS

| TOTAL: 38 CREDITS |

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

CHOICE 1: General Education Core Areas

<table>
<thead>
<tr>
<th>CREDITS</th>
<th>DTDS 110</th>
<th>Industrial Blueprint Reading</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>EMFA 100</td>
<td>Medical First Responder</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>MACH 105</td>
<td>Machine Tool Survey</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>MACH 110</td>
<td>Machine Tool Technology I</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>MACH 111</td>
<td>Machine Tool Technology II</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>MACH 112</td>
<td>Machine Tool Technology III</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>MACH 120</td>
<td>Effect Use Machinery Handbook</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>MACH 135</td>
<td>Metallurgy and Heat Treat</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>MACH 140</td>
<td>Tooling Theory and Practice</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>MATH 114</td>
<td>Technical Math I</td>
<td>4</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL: 38

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>
<th>III</th>
<th>IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>DTDS 110</td>
<td>EMFA 100</td>
<td>MACH 112</td>
<td></td>
</tr>
<tr>
<td>MACH 105</td>
<td>MACH 110</td>
<td>MACH 140</td>
<td></td>
</tr>
<tr>
<td>MACH 120</td>
<td>MACH 111</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH 114</td>
<td>MACH 135</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
WELDING TECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 0156 (Effective Fall 2000–Summer 2005)

Welding is a process of fusing, adhesion, and joining into a solid state. Welding products are 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 craftsman with a basic knowledge of metals, applied mathematics, blueprint reading, good eyesight, self-discipline, and a respect for safety. A welder also needs to work well with his/her hands and have good manual coordination. Many hours of practice and proper training in the basics of MIG, TIG, shielded metal arc, brazing, and oxy-fuel cutting and plasma cutting are necessary. Welders can be found in tool and die industries, auto makers, construction, oil refineries, pipelines and pressure vessels, aircraft industries, and many more metal-related industries.

PREREQUISITES
Students should see the Course Descriptions section of this catalog or the Course Schedule for course prerequisite information. Basic skills assessment and advising information may be found on page 86 of this catalog.

GENERAL EDUCATION
General education is an important part of this program and includes a mathematics competency requirement. To fulfill the mathematics competency requirement, students may need to complete specific coursework in mathematics. For information on how to fulfill all general education requirements, see page 23.

INFORMATION
Contact the Technology Careers Department, Gannon Vocational-Technical Center, Room 136, telephone number (317) 483-1368.

REQUIREMENTS

<table>
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<th>CODE</th>
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<tr>
<td>EMTA 100</td>
<td>Medical First Responder</td>
<td>4</td>
</tr>
<tr>
<td>MACH 105</td>
<td>Machine Tool Survey</td>
<td>3</td>
</tr>
<tr>
<td>MACH 125</td>
<td>Metallurgy and Heat Treat</td>
<td>4</td>
</tr>
<tr>
<td>MFGM 125</td>
<td>Rigging</td>
<td>4</td>
</tr>
<tr>
<td>WELD 100</td>
<td>Combination Welding</td>
<td>2</td>
</tr>
<tr>
<td>WELD 101</td>
<td>Advanced ARC Welding</td>
<td>4</td>
</tr>
<tr>
<td>WELD 110</td>
<td>Gas Metal ARC Welding</td>
<td>4</td>
</tr>
<tr>
<td>WELD 111</td>
<td>Gas Tungsten ARC Welding</td>
<td>4</td>
</tr>
<tr>
<td>WELD 120</td>
<td>Sheet Fabrication/Inspection</td>
<td>4</td>
</tr>
<tr>
<td>WELD 125</td>
<td>Structural/Reading Weld</td>
<td>4</td>
</tr>
<tr>
<td>WELD 201</td>
<td>Tool and Die Welding</td>
<td>2</td>
</tr>
<tr>
<td>WELD 205</td>
<td>Pipe Welding</td>
<td>4</td>
</tr>
<tr>
<td>WRIT 124</td>
<td>Technical Writing</td>
<td>3</td>
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LIMITED CHOICE REQUIREMENTS

<table>
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<tr>
<th>CODE</th>
<th>TITLE</th>
<th>TOTAL: 15–18 CREDITS</th>
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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)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>Writing Core Area (See Note 1)</td>
<td>0</td>
</tr>
<tr>
<td>3</td>
<td>Speech Communication Core Area</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>Science/Technology Core Area</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>Global Perspectives and Diversity Core Area</td>
<td>3</td>
</tr>
</tbody>
</table>

**CHOICE 2:** Technical Related

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tr>
<td>6–7</td>
<td>Cooperative Education (Tech)</td>
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<tr>
<td>3</td>
<td>Practical Electricity</td>
<td></td>
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<tr>
<td>4</td>
<td>Manufacturing Processes</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Industrial Pneumatics</td>
<td></td>
</tr>
</tbody>
</table>

MINIMUM TOTAL: 61

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

SUGGESTED COURSE SEQUENCE
Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the 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</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMTA 100</td>
<td>Medical First Responder</td>
</tr>
<tr>
<td>MACH 135</td>
<td>Metallurgy and Heat Treat</td>
</tr>
<tr>
<td>MFGM 125</td>
<td>Rigging</td>
</tr>
<tr>
<td>WELD 100</td>
<td>Combination Welding</td>
</tr>
<tr>
<td>WELD 101</td>
<td>Advanced ARC Welding</td>
</tr>
<tr>
<td>WELD 110</td>
<td>Gas Metal ARC Welding</td>
</tr>
<tr>
<td>WELD 111</td>
<td>Gas Tungsten ARC Welding</td>
</tr>
<tr>
<td>WELD 120</td>
<td>Sheet fabrication/Inspection</td>
</tr>
<tr>
<td>WELD 201</td>
<td>Structural/Reading Weld</td>
</tr>
</tbody>
</table>

TOTAL: 32 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.

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<tr>
<th>Course</th>
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<tbody>
<tr>
<td>EMTA 100</td>
<td>Medical First Responder</td>
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<tr>
<td>MACH 135</td>
<td>Metallurgy and Heat Treat</td>
</tr>
<tr>
<td>MFGM 125</td>
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<tr>
<td>WELD 100</td>
<td>Combination Welding</td>
</tr>
<tr>
<td>WELD 101</td>
<td>Advanced ARC Welding</td>
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<tr>
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</tr>
<tr>
<td>WELD 111</td>
<td>Gas Tungsten ARC Welding</td>
</tr>
<tr>
<td>WELD 120</td>
<td>Sheet fabrication/Inspection</td>
</tr>
<tr>
<td>WELD 201</td>
<td>Structural/Reading Weld</td>
</tr>
</tbody>
</table>

TOTAL: 32 CREDITS

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

Curriculum Code: 10267 (Effective Fall 2000–Summer 2005)

Graduates of the Interior Design Technology program work with professional interior designers to plan and create the overall design for interior spaces. They may be employed as estimators, retail sales persons, space planners, computer-aided drafting and design technicians, lighting and color consultants, or kitchen/bath designers. Depending on their specialty, interior design graduates work in retail or wholesale showrooms, design firms, building construction management offices, hospitality chains, interior furnishings manufacturers, or facilities departments. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

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

GENERAL EDUCATION
General education is an important part of this program and includes a mathematics competency requirement. To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics. For information on how to fulfill all general education requirements, see page 23.

INFORMATION
Contact the Technology Careers Department, Gannon Vocational-Technical Center, Room 136, telephone number (517) 485-1336.

REQUIREMENTS

<table>
<thead>
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<th>REQUIREMENTS</th>
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<tbody>
<tr>
<td>CODE</td>
<td>TITLE</td>
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<tr>
<td>ARCH 101</td>
<td>Architectural Drafting</td>
</tr>
<tr>
<td>ARCH 121</td>
<td>Visual Communication I</td>
</tr>
<tr>
<td>INTR 100</td>
<td>Interior Design Fundamentals</td>
</tr>
<tr>
<td>INTR 110</td>
<td>Applied Color Theory</td>
</tr>
<tr>
<td>INTR 151</td>
<td>Computer-Aided Kitchen Design</td>
</tr>
<tr>
<td>INTR 170</td>
<td>Intro to Interior Design</td>
</tr>
<tr>
<td>INTR 175</td>
<td>Interior Space Planning</td>
</tr>
<tr>
<td>INTR 190</td>
<td>Interior/Materials/Equipment I</td>
</tr>
<tr>
<td>INTR 222</td>
<td>CADD for Interiors</td>
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<tr>
<td>INTR 225</td>
<td>CADD for Space Planning</td>
</tr>
<tr>
<td>INTR 240</td>
<td>Fundamentals of Lighting</td>
</tr>
<tr>
<td>INTR 244</td>
<td>3-D Visual Display Studio</td>
</tr>
<tr>
<td>INTR 246</td>
<td>Residential Interiors Studio</td>
</tr>
<tr>
<td>INTR 248</td>
<td>Non-Residential Interiors Studio</td>
</tr>
<tr>
<td>INTR 252</td>
<td>Codes and Specifications</td>
</tr>
<tr>
<td>INTR 256</td>
<td>Interior Professional Practice</td>
</tr>
<tr>
<td>INTR 263</td>
<td>Interior Design Internship</td>
</tr>
<tr>
<td>INTR 270</td>
<td>Interior Design Portfolio</td>
</tr>
</tbody>
</table>

LIMITED CHOICE REQUIREMENTS

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>TOTAL: 13 CREDITS</th>
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</thead>
<tbody>
<tr>
<td>CODE</td>
<td>TITLE</td>
</tr>
</tbody>
</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
- Speech Communication Core Area | 3
- Science/Technology Core Area | 3
- Global Perspectives and Diversity Core Area (See Note 1) | 0
- Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.) | 0

**CHOICE 2:** Discipline Related History

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>HUMS 211</td>
<td>History of Art</td>
<td>4</td>
</tr>
<tr>
<td>HUMS 212</td>
<td>History of Art II</td>
<td>4</td>
</tr>
</tbody>
</table>

**MINIMUM TOTAL**

67

**NOTE**

1. Students must complete one course from Choice 2 to fulfill the requirements for this Core area.

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

Curriculum Code: 0185 (Effective Fall 2000–Summer 2005)

A professional horticulturist deals with plant materials, their growth, development, propagation, marketing, and use. This horticulturist works with environmental conditions and pest problems of ornamental plants and their management. The two major specialty areas are landscape horticulture and floriculture. A background in plant maintenance, knowledge of growing environments and structures, as well as retail and marketing skills, is vital. Horticulturists are employed by florists, greenhouses and garden centers, nurseries, retail sales outlets, landscape contractors, design and construction firms, and lawn care companies. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES

Students should see the Course Descriptions section of this catalog or the Course Schedule for course prerequisite information. Basic skills assessment and advising information may be found on page 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, students may need to complete specific course work in mathematics. For information on how to fulfill all general education requirements, see page 25.

INFORMATION

Contact the Technology Careers Department, Gannon Vocational-Technical Center, Room 128, telephone number (517) 489-1398.

REQUIREMENTS

<table>
<thead>
<tr>
<th>COURSE</th>
<th>TITLE</th>
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<tbody>
<tr>
<td>HORT 102</td>
<td>Intro Ornamental Horticulture</td>
<td>2</td>
</tr>
<tr>
<td>HORT 105</td>
<td>Pest/Problem Ornamental Plants</td>
<td>2</td>
</tr>
<tr>
<td>HORT 230</td>
<td>Plant Propagation/Nursery Op</td>
<td>4</td>
</tr>
<tr>
<td>HORT 235</td>
<td>Greenhouse Structures/Environ</td>
<td>3</td>
</tr>
<tr>
<td>LAND 100</td>
<td>Intro to Landscape Drafting</td>
<td>2</td>
</tr>
<tr>
<td>LAND 150</td>
<td>Interior Landscaping</td>
<td>3</td>
</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, Vines</td>
<td>3</td>
</tr>
<tr>
<td>LAND 142</td>
<td>Perennial/Annual Flower Plants</td>
<td>3</td>
</tr>
<tr>
<td>LAND 163</td>
<td>Designing Ornamental Gardens</td>
<td>3</td>
</tr>
<tr>
<td>LAND 282</td>
<td>Computer Draft/Desgn Land Arch</td>
<td>3</td>
</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)

<table>
<thead>
<tr>
<th>CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Writing Core Area (See Note 1)</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>
<tr>
<td>Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)</td>
</tr>
</tbody>
</table>

CHOICE 2: Specialization

Subchoice 2A: Floriculture

<table>
<thead>
<tr>
<th>COURSE</th>
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<tbody>
<tr>
<td>HORT 103</td>
<td>Foliage and Flowering Plants</td>
</tr>
<tr>
<td>HORT 107</td>
<td>Beginning Floral Design</td>
</tr>
<tr>
<td>HORT 109</td>
<td>Contemporary Floral Design</td>
</tr>
<tr>
<td>HORT 110</td>
<td>Wedding Floral Design</td>
</tr>
<tr>
<td>HORT 143</td>
<td>Cut Flower, Foliage, Pot Plant</td>
</tr>
<tr>
<td>HORT 236</td>
<td>Greenhouse Ornamentals</td>
</tr>
<tr>
<td>HORT 237</td>
<td>Bedding Plant Production</td>
</tr>
<tr>
<td>HORT 238</td>
<td>Garden Cent/ nursry Sales</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL

64

NOTE

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

SUGGESTED COURSE SEQUENCE

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

Floriculture Option

<table>
<thead>
<tr>
<th>COURSE</th>
<th>CREDITS</th>
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<tbody>
<tr>
<td>HORT 102</td>
<td>100</td>
</tr>
<tr>
<td>HORT 103</td>
<td>110</td>
</tr>
<tr>
<td>HORT 110</td>
<td>230</td>
</tr>
<tr>
<td>HORT 137</td>
<td>100</td>
</tr>
<tr>
<td>HORT 109</td>
<td>237</td>
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<tr>
<td>HORT 143</td>
<td>238</td>
</tr>
<tr>
<td>LAND 100</td>
<td>141</td>
</tr>
<tr>
<td>LAND 142</td>
<td>Lim.Ch.</td>
</tr>
<tr>
<td>LAND 140</td>
<td>124</td>
</tr>
<tr>
<td>LAND 142</td>
<td>Lim.Ch.</td>
</tr>
</tbody>
</table>

Landscape Horticulture Option

<table>
<thead>
<tr>
<th>COURSE</th>
<th>CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>HORT 102</td>
<td>230</td>
</tr>
<tr>
<td>HORT 235</td>
<td>105</td>
</tr>
<tr>
<td>HORT 143</td>
<td>141</td>
</tr>
<tr>
<td>LAND 100</td>
<td>150</td>
</tr>
<tr>
<td>LAND 160</td>
<td>282</td>
</tr>
<tr>
<td>WRIT 124</td>
<td>Lim.Ch.</td>
</tr>
</tbody>
</table>

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120 LANSING COMMUNITY COLLEGE CATALOG 2000–2001
LANDSCAPE ARCHITECTURE
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 9203 (Effective Fall 2000–Summer 2006)

Landscape architects, designers, and planners deal with the ecological design and management of the land. Landscape architects and designers coordinate the analysis, planning, layout, design, and management of the exterior and interior landscape. Landscape architects and designers are employed by design and engineering firms, parks and recreation offices, landscape contractors, design and build firms, nurseries and garden centers, arboretums and botanic gardens, and grounds management firms. A supporting background in computer design graphics and G.I.S. is helpful. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

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

GENERAL EDUCATION
General education is an important part of this program and includes a mathematics competency requirement. To fulfill the mathematics competency requirement, students must complete specific course work in mathematics. For information on how to fulfill all general education requirements, see page 23.

INFORMATION
Contact the Technology Careers Department, Gannon Vocational-Technical Center, Room 135, telephone number (517) 483-1336.

REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
<th>TOTAL: 81 CREDITS</th>
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<tr>
<td>LAND 100</td>
<td>Intro to Landscape Drafting (See Note 1)</td>
</tr>
<tr>
<td>LAND 140</td>
<td>Evergreen and Deciduous Trees</td>
</tr>
<tr>
<td>LAND 141</td>
<td>Flowering Trees, Shrubs, Vines</td>
</tr>
<tr>
<td>LAND 150</td>
<td>Principles of Landscape Arch</td>
</tr>
<tr>
<td>LAND 152</td>
<td>Landscape Graphics Comm-Begin</td>
</tr>
<tr>
<td>LAND 153</td>
<td>Landscape Graphics Comm-Adv</td>
</tr>
<tr>
<td>LAND 160</td>
<td>Planting Design I</td>
</tr>
<tr>
<td>LAND 161</td>
<td>Planting Design II</td>
</tr>
<tr>
<td>LAND 164</td>
<td>Site Design</td>
</tr>
<tr>
<td>LAND 170</td>
<td>Site Grading I</td>
</tr>
<tr>
<td>LAND 171</td>
<td>Site Grading II</td>
</tr>
<tr>
<td>LAND 172</td>
<td>Site Layout</td>
</tr>
<tr>
<td>LAND 225</td>
<td>Landscape Cost Estimation</td>
</tr>
<tr>
<td>LAND 232</td>
<td>Professional Res. Land Design</td>
</tr>
<tr>
<td>LAND 233</td>
<td>Grounds Management</td>
</tr>
<tr>
<td>LAND 250</td>
<td>Landscape Construction Methods</td>
</tr>
<tr>
<td>LAND 252</td>
<td>Landscape Construction Details</td>
</tr>
<tr>
<td>LAND 276</td>
<td>Landscape Documents and Spec</td>
</tr>
<tr>
<td>LAND 282</td>
<td>Computer Draft/Degn Land Arch</td>
</tr>
<tr>
<td>LAND 283</td>
<td>Beginning LANDCAD</td>
</tr>
<tr>
<td>WRIT 124</td>
<td>Technical Writing</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 2) | 0 |
| Speech Communication Core Area | 3 |
| Science/Technology Core Area | 3 |
| Global Perspectives and Diversity Core Area | 3 |
| Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.) | 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.

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LEGAL ASSISTANT
ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 0101 (Effective Fall 2000–Summer 2005)

Legal assistants, also known as paralegals, assist lawyers by performing many of the same tasks, except 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 authorities, judicial decisions and other documents/materials related to the case; and prepare written reports after organizing and analyzing all the information. Other duties may include drafting briefs and pleadings, obtaining affidavits, assisting the lawyer during trial, and organizing and maintaining document and correspondence files. Some legal assistants may help with completing forms, tax returns, and drafting contracts.

PREREQUISITES

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

GENERAL EDUCATION

General education is an important part of this program and includes the mathematics competency requirement. To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics. For information on how to fulfill all general education requirements, see page 23.

INFORMATION

Contact the Business Careers Department, Old Central Building, Room 210, telephone number (517) 493-1422.

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>TITLE</th>
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<tbody>
<tr>
<td>CABS 113</td>
<td>Microsoft Word Office/Int Key</td>
<td>4</td>
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<tr>
<td>LEGL 115</td>
<td>Legal Assistant Career/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 160</td>
<td>Critical Thinking in Law</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>Basic Law I, Basic Principles</td>
<td>2</td>
</tr>
<tr>
<td>LEGL 225</td>
<td>Legal Research and Writing II</td>
<td>3</td>
</tr>
<tr>
<td>LEGL 228</td>
<td>Computer Tech for Legal Assist</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>
</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: General Education Core Areas 9 Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Writing Core Area (See Note 1)</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>
<tr>
<td>Mathematics Competency</td>
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</table>

<table>
<thead>
<tr>
<th>CHOICE 2: Business Law 3 Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Legl 216</td>
</tr>
<tr>
<td>Legl 217</td>
</tr>
<tr>
<td>Legl 220</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CHOICE 3: General Law 9 Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Legl 216</td>
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<tr>
<td>Legl 221</td>
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<tr>
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<td>Legl 223</td>
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<tr>
<td>Legl 227</td>
</tr>
<tr>
<td>Legl 280</td>
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</table>

MINIMUM TOTAL 60

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>
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<tbody>
<tr>
<td>CABS 113</td>
<td>Legl 120</td>
<td>Legl 121</td>
<td>Legl 225</td>
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<tr>
<td>LEGL 115</td>
<td>Legl 211</td>
<td>Legl 210</td>
<td>Legl 228</td>
</tr>
<tr>
<td>LEGL 160</td>
<td>WRIT 122</td>
<td>Lim-Ch.1</td>
<td>Lim-Ch.3</td>
</tr>
<tr>
<td>LEGL 215</td>
<td>Lim-Ch.1</td>
<td>Lim-Ch.2</td>
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<tr>
<td>WRIT 121</td>
<td>Lim-Ch.1</td>
<td>Lim-Ch.3</td>
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</tr>
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</table>

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LEGAL ASSISTANT POST-BACHELOR
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 0744 (Effective Fall 2000-Summer 2005)

The legal assistant career is an excellent choice for students possessing a bachelor's degree, especially students with strong analytical and writing skills. These students may select the following certificate curriculum which requires only legal assistant courses.

PREREQUISITES

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

INFORMATION

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

REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
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<tbody>
<tr>
<td>LEGL 115</td>
<td>Legal Assistant Career/Ethics</td>
<td>3</td>
</tr>
<tr>
<td>LEGL 120</td>
<td>Legal Research I (See Note 1)</td>
<td>3</td>
</tr>
<tr>
<td>LEGL 121</td>
<td>Legal Writing I (See Note 1)</td>
<td>3</td>
</tr>
<tr>
<td>LEGL 210</td>
<td>Litigation Procedures (See Note 1)</td>
<td>4</td>
</tr>
<tr>
<td>LEGL 211</td>
<td>Trust Law (See Note 1)</td>
<td>2</td>
</tr>
<tr>
<td>LEGL 215</td>
<td>Business Law I, Basic Principles</td>
<td>3</td>
</tr>
<tr>
<td>LEGL 225</td>
<td>Legal Research and Writing II</td>
<td>3</td>
</tr>
</tbody>
</table>

LIMITED CHOICE REQUIREMENTS

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

**CHOICE 1:**

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<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 Organization</td>
<td>3</td>
</tr>
<tr>
<td>LEGL 220</td>
<td>Internet Legal Issues/Organize</td>
<td>3</td>
</tr>
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</table>

**CHOICE 2:**

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>LEGL 218</td>
<td>Litigation Specialties</td>
<td>3</td>
</tr>
<tr>
<td>LEGL 221</td>
<td>Real Estate Transaction</td>
<td>3</td>
</tr>
<tr>
<td>LEGL 222</td>
<td>Probate Law and Procedure</td>
<td>3</td>
</tr>
<tr>
<td>LEGL 223</td>
<td>Domestic Relations</td>
<td>3</td>
</tr>
<tr>
<td>LEGL 224</td>
<td>Administrative Law</td>
<td>3</td>
</tr>
<tr>
<td>LEGL 226</td>
<td>Legal Interview/Investigation</td>
<td>3</td>
</tr>
<tr>
<td>LEGL 227</td>
<td>Bankruptcy and Collections</td>
<td>3</td>
</tr>
<tr>
<td>LEGL 228</td>
<td>Computer Tech for Legal Assistant</td>
<td>3</td>
</tr>
<tr>
<td>LEGL 260</td>
<td>Legal Assistant Internship</td>
<td>3</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL: 33

NOTES

1. Students in this curriculum will be granted a prerequisite override to take these courses concurrently with LEGL 115. Contact the Business Careers Department, telephone number (517) 483-1522 prior to registration.

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 #0101.

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.

| LEGL 115 | LEGL 211 |
| LEGL 120 | LEGL 225 |
| LEGL 210 | Lim.Ch.  |
| LEGL 215 | Lim.Ch.  |
| LEGL 215 | Lim.Ch.  |

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

Curriculum Code: 6280 (Effective Fall 2000–Summer 2005)

This is an advanced certificate program that may be taken after obtaining an associate or baccalaureate degree in order to enhance an individual's employment and advancement opportunities. Courses in this certificate may be used as the third year in the Northwood University Bachelor of Business Administration degree. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

### PREREQUISITES

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

### INFORMATION

Contact the Business Careers Department, Old Central Building, Room 210, telephone number (517) 483-1522 or the Advanced Management Coordinator at (517) 483-1544.

### REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGMT</td>
<td>Organization Development</td>
<td>3</td>
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<tr>
<td>MGMT</td>
<td>Adv Mgmt Communication Skills</td>
<td>3</td>
</tr>
<tr>
<td>MGMT</td>
<td>Managerial Ethics</td>
<td>3</td>
</tr>
<tr>
<td>MGMT</td>
<td>Managerial Statistics</td>
<td>3</td>
</tr>
<tr>
<td>MGMT</td>
<td>Human Resource Mgmt Skills</td>
<td>3</td>
</tr>
<tr>
<td>MGMT</td>
<td>Current Topics in Management</td>
<td>3</td>
</tr>
<tr>
<td>MGMT</td>
<td>Strategic Management/Policy</td>
<td>3</td>
</tr>
</tbody>
</table>

**TOTAL: 21 CREDITS**

### LIMITED CHOICE REQUIREMENTS

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

**CHOICE 1:**

- **Management**
  - MGMT 222: Supervision
  - MGMT 225: Principles of Management
  - MGMT 300: Managerial Leadership

**TOTAL: 3 Credits**

**CHOICE 2:**

- **Finance**
  - ACCG 211: Principles of Finance
  - MGMT 346: Managerial Finance

**TOTAL: 3 Credits**

**CHOICE 3:**

- **Business Related (See Note 2)**
  - ACCG 210: Principles of Accounting I
  - ACCG 211: Principles of Accounting II
  - BUSN 118: Introduction to Business
  - BUSN 201: International Business
  - CISB 100: Intro Computer Info Systems
  - ECON 291: Principles of Economics-Micro
  - ECON 292: Principles of Economics-Macro
  - LEGL 215: Busn Law I, Basic Principles
  - MKTG 200: Principles of Marketing
  - MKTG 235: Marketing Internship
  - WRIT 127: Business Writing

**3-4 Credits**

**MINIMUM TOTAL:**

**30 Credits**

### NOTES

1. It is recommended that MGMT 346 be taken near the end of this Certificate program.
2. Students may also choose a maximum of 2 credits total from the T.I.M.E. Series (course codes MGMT 240–MGMT 279) and/or a maximum of 2 credits from CABS-prefix courses of 110 or above.
3. Students should confer with a Business Careers program advisor to assure that selection of Limited Choice courses will best fit their career plans.

---

**SUGGESTED COURSE SEQUENCE**

Students should see course descriptions to find out what 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>MGMT 304</th>
<th>MGMT 332</th>
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</thead>
<tbody>
<tr>
<td>MGMT 339</td>
<td>MGMT 337</td>
</tr>
<tr>
<td>MGMT 335</td>
<td>MGMT 348</td>
</tr>
<tr>
<td>MGMT 338</td>
<td>Lim.Ch.</td>
</tr>
<tr>
<td>Lim.Ch.</td>
<td>Lim.Ch.</td>
</tr>
</tbody>
</table>
HUMAN RESOURCE MANAGEMENT
ASSOCIATE IN BUSINESS DEGREE
Curriculum Code: 0712 (Effective Fall 2000–Summer 2005)

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 in recruiting 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; and analyzing labor market data and employee selection and training. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

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

GENERAL EDUCATION
 general education is an important part of this program and includes a mathematics competency requirement. To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics. For information on how to fulfill all general education requirements, see page 23.

INFORMATION
Contact the Business Careers Department, Old Central Building, room 216, telephone number (517) 483-1522.

REQUIREMENTS

<p>| REQUIREMENTS TOTAL: 45 CREDITS |</p>
<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUSN 118</td>
<td>Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>CISP 200</td>
<td>Info Sys Tech/Problem Solving</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 222</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 227</td>
<td>Training/Development for Business</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 229</td>
<td>Organizational Behavior</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 229</td>
<td>Compensation Management</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</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 237</td>
<td>Management/Continual Improvement</td>
<td>3</td>
</tr>
<tr>
<td>SPCH 110</td>
<td>Oral Commun. in the Workplace</td>
<td>3</td>
</tr>
<tr>
<td>WRIT 127</td>
<td>Business Writing</td>
<td>3</td>
</tr>
</tbody>
</table>

LIMITED CHOICE REQUIREMENTS
TOTAL: 15–19 CREDITS
Complete the indicated number of credits from each CHOICE listed below.

CHOICE 1: General Education Core Areas
(See the GENERAL EDUCATION section above)
0 Credits
Writing Core Area (See Note 1) 0
Speech Communication Core Area (See Note 1) 0
Science/Technology Core Area (See Note 1) 0
Global Perspectives and Diversity Core Area (See Note 1) 0
Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)

CHOICE 2: Specialty Related (See Note 2)
9–11 Credits
BUSN 229 | Public Relations | 2 |
LABR 200 | Intro to Labor Relations | 3 |
LABR 201 | Labor Negotiation/Contract Admin | 3 |
LABR 203 | Labor Law | 3 |
LEG 215 | Bus Law I, Basic Principles | 3 |
MGMT 150 | Managing Customer Relations | 3 |
MGMT 229 | Time and Stress Management | 3 |
MGMT 282 | Management Internship | 3 |
MGMT 235 | Independent Study/Management | 1–3 |
MGMT 300 | Managerial Leadership | 3 |
MGMT 304 | Organizational Development | 3 |
MGMT 339 | Adv Mgmt Communication Skills | 3 |
MGMT 357 | Human Resource Mgmt Skills | 3 |

MKTG 100 | Current Issues in Business | 3 |
MKTG 119 | Mktg/Manage Your Profess Image | 3 |

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

CHOICE 4: Quantitative Related
ACCG 101 | Accounting Info for Management | 3 |
ACCG 210 | Principles of Accounting I | 4 |
MATH 117 | Math for Business | 4 |
MGMT 335 | Managerial Statistics | 3 |
MGMT 346 | Managerial Finance | 3 |
MINIMUM TOTAL 60

NOTES
1. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.
2. Students may earn a maximum of 2 credits total from the T.I.M.E. Series (course codes MGMT 240 through MGMT 279).
3. Choose AABS-prefix courses of 110 or above and/or AABS-prefix courses above 100.
4. Students should confer with a Business Careers program advisor to assure that selection of Limited Choice courses will best fit their career plans.

SUGGESTED COURSE SEQUENCE
Students should see course descriptions to find out what 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: 0256 (Effective Fall 2000–Summer 2005)
Certificate holders may improve their opportunities for advancement in this or a related area. Additional education enhances the individual's employment opportunities.

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

INFORMATION
Contact the Business Careers Department, Old Central Building, room 216, telephone number (517) 483-1522.

REQUIREMENTS

<p>| REQUIREMENTS TOTAL: 12 CREDITS |</p>
<table>
<thead>
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<tbody>
<tr>
<td>LABR 200</td>
<td>Intro to Labor Relations</td>
<td>3</td>
</tr>
<tr>
<td>LABR 201</td>
<td>Labor Negotiation/Contract Admin</td>
<td>3</td>
</tr>
<tr>
<td>LABR 203</td>
<td>Labor Law</td>
<td>3</td>
</tr>
<tr>
<td>LABR 204</td>
<td>Employment Law for Managers</td>
<td>3</td>
</tr>
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</table>

MINIMUM TOTAL 12

SUGGESTED COURSE SEQUENCE
Students should see course descriptions to find out what 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>LABR 200</td>
<td>LABR 201</td>
</tr>
<tr>
<td>LABR 204</td>
<td>LABR 204</td>
</tr>
</tbody>
</table>
MANAGEMENT
ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 0245 (Effective Fall 2000–Summer 2006)

A manager plans, organizes, delegates, and controls efforts 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 organizational goals. Graduates of this program may qualify for entry-level positions. Addition of a technical or business specialty increases one's employability. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

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

GENERAL EDUCATION
General education is an important part of this program and includes a mathematics competency requirement. To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics. Information on how to fulfill all general education requirements, see page 53.

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

REQUIREMENTS

<table>
<thead>
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<td>BUSN 231</td>
<td>International Business</td>
<td>3</td>
</tr>
<tr>
<td>CISB 200</td>
<td>Info Sys Tech/Problem Solving</td>
<td>3</td>
</tr>
<tr>
<td>LABR 200</td>
<td>Intro to Labor Relations</td>
<td>3</td>
</tr>
<tr>
<td>LABR 234</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 222</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 255</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</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 237</td>
<td>Managing/Continual Improvement</td>
<td>3</td>
</tr>
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<td>MKTG 200</td>
<td>Principles of Marketing</td>
<td>3</td>
</tr>
<tr>
<td>SPCH 110</td>
<td>Oral Communinc in the Workplace</td>
<td>3</td>
</tr>
<tr>
<td>WRIT 127</td>
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LIMITED CHOICE REQUIREMENTS

<table>
<thead>
<tr>
<th>Choice</th>
<th>Total: 12–15 Credits</th>
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<tbody>
<tr>
<td>1: General Education Core Areas</td>
<td>0 Credits</td>
</tr>
<tr>
<td>(See the GENERAL EDUCATION section above)</td>
<td></td>
</tr>
<tr>
<td>Writing Core Area (See Note 1)</td>
<td>0</td>
</tr>
<tr>
<td>Speech Communication Core Area (See Note 1)</td>
<td>0</td>
</tr>
<tr>
<td>Science/Technology Core Area (See Note 1)</td>
<td>0</td>
</tr>
<tr>
<td>Global Perspectives and Diversity Core Area (See Note 1)</td>
<td>0</td>
</tr>
<tr>
<td>Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)</td>
<td>0</td>
</tr>
<tr>
<td>2: Accounting</td>
<td>3–4 Credits</td>
</tr>
<tr>
<td>ACCG 101</td>
<td>Accounting Info for Management</td>
</tr>
<tr>
<td>ACCG 210</td>
<td>Principles of Accounting I</td>
</tr>
<tr>
<td>MATH 117</td>
<td>Math for Business</td>
</tr>
<tr>
<td>MGMT 346</td>
<td>Managerial Finance</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL: 60

NOTES
1. Students completing REQUIREMENTS have fulfilled the requirements for this core area.
2. Students may also choose a maximum of 2 credits total from the T.I.M.E. Series (course codes MGMT 240 through MGMT 278) and/or a maximum of 2 credits of CABS-prefix courses of 119 or above.
3. Students should confer with a Business Careers program advisor to assure that selection of Limited Choice courses will best fit their career plans.

SUGGESTED COURSE SEQUENCE

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

<table>
<thead>
<tr>
<th>I</th>
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<th>IV</th>
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<tr>
<td>BUSN 118</td>
<td>BUSN 201</td>
<td>MGMT 225</td>
<td>LABR 204</td>
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<tr>
<td>CISB 200</td>
<td>MGMT 223</td>
<td>MGMT 228</td>
<td>MGMT 200</td>
</tr>
<tr>
<td>LABR 200</td>
<td>MGMT 224</td>
<td>MKTG 200</td>
<td>MGMT 237</td>
</tr>
<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>
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</table>

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MANAGEMENT

CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 0246 (Effective Fall 2000-Summer 2005)

Certification holders may improve their opportunities for advancement in this or a related area. The Certificate of Achievement is often used 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 toward an Associate Degree in Management.

PREREQUISITES

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

INFORMATION

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

REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUSN 118</td>
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<tr>
<td>CISB 200</td>
<td>Info Sys Tech/Problem Solving</td>
<td>3</td>
</tr>
<tr>
<td>LABR 204</td>
<td>Employment Law for Managers</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</td>
<td>3</td>
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</table>

TOTAL: 21 CREDITS

LIMITED CHOICE REQUIREMENTS

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<tr>
<th>CODE</th>
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<tbody>
<tr>
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<td>Supervisory Management</td>
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</tr>
<tr>
<td>MGMT 246</td>
<td>Supervisory Management</td>
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</tr>
<tr>
<td>MGMT 254</td>
<td>How to Write a Business Plan</td>
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</table>

TOTAL: 6–7 CREDITS

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

CHOICE 1: Accounting

<table>
<thead>
<tr>
<th>CODE</th>
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</thead>
<tbody>
<tr>
<td>ACCT 101</td>
<td>Accounting for Non-Majors</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 201</td>
<td>Accounting for Non-Majors</td>
<td>3</td>
</tr>
<tr>
<td>MATH 117</td>
<td>Math for Business</td>
<td>4</td>
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</table>

CHOICE 2: Communication Skills

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPCH 110</td>
<td>Oral Communication</td>
<td>3</td>
</tr>
<tr>
<td>WRIT 127</td>
<td>Business Writing</td>
<td>3</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL: 30

SUGGESTED COURSE SEQUENCE

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

<table>
<thead>
<tr>
<th>BUSN 118</th>
<th>LABR 204</th>
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<tbody>
<tr>
<td>CISB 200</td>
<td>MGMT 224</td>
</tr>
<tr>
<td>MGMT 225</td>
<td>MGMT 234</td>
</tr>
</tbody>
</table>

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SMALL BUSINESS MANAGEMENT

CERTIFICATE OF COMPLETION

Curriculum Code: 0909 (Effective Fall 2000-Summer 2005)

This program consists of practical hands-on courses that provide students with the basic business knowledge and skills necessary to start a small business.

PREREQUISITES

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

INFORMATION

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

REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
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<tbody>
<tr>
<td>BUSN 191</td>
<td>Independent Study/Business</td>
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</tr>
<tr>
<td>BUSN 295</td>
<td>Small Business Management</td>
<td>3</td>
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<tr>
<td>MKTG 200</td>
<td>Principles of Marketing</td>
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TOTAL: 7 CREDITS

LIMITED CHOICE REQUIREMENTS

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<tbody>
<tr>
<td>MKTG 223</td>
<td>Supervision</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 244</td>
<td>Supervisory Management</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 254</td>
<td>How to Write a Business Plan</td>
<td>3</td>
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</tbody>
</table>

TOTAL: 9–10 CREDITS

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

CHOICE 1: Accounting

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
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<tbody>
<tr>
<td>ACCT 100</td>
<td>Accounting for Majors</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 101</td>
<td>Accounting for Management</td>
<td>3</td>
</tr>
</tbody>
</table>

CHOICE 2: Management Related (See Note 2)

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>MKTG 223</td>
<td>Supervision</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 244</td>
<td>Supervisory Management</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 254</td>
<td>How to Write a Business Plan</td>
<td>3</td>
</tr>
</tbody>
</table>

CHOICE 3: Computer Related

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CABS 110</td>
<td>Microsoft Office</td>
<td>3</td>
</tr>
<tr>
<td>CABS 120</td>
<td>Excel</td>
<td>3</td>
</tr>
<tr>
<td>CISB 190</td>
<td>Internet Literacy</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 210</td>
<td>Marketing on the Internet</td>
<td>3</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL: 15

NOTES

1. It is recommended that BUSN 191 be taken during the last semester of this certificate program. This capstone experience will result in a completed business plan.
2. Students may also choose up to 4 credits from the TIME Series (MGMT 240 through MGMT 279) to fulfill this requirement.

SUGGESTED COURSE SEQUENCE

Students should contact the Small Business Management Program Advisor as soon as possible to plan this program. Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites to fulfill) should contact the advisor for help with adjustments.

<table>
<thead>
<tr>
<th>BUSN 295</th>
<th>BUSN 191</th>
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<tbody>
<tr>
<td>Lim.Ch. 1</td>
<td>Lim.Ch.2</td>
</tr>
<tr>
<td>Lim.Ch. 2</td>
<td>Lim.Ch.3</td>
</tr>
</tbody>
</table>
COMPUTER SALES SPECIALIST
ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 0179 (Effective Fall 2000–Summer 2005)

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

GENERAL EDUCATION
General education is an important part of this program and includes a mathematics competency requirement. To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics. For information on how to fulfill all general education requirements, see page 23.

INFORMATION
Contact the Business Careers Department, Old Central Building, Room 210, telephone number (517) 483-1222.

REQUIREMENTS

<table>
<thead>
<tr>
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<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUSN 118</td>
<td>Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>CABS 110</td>
<td>Microsoft Office</td>
<td>3</td>
</tr>
<tr>
<td>CABS 195</td>
<td>Microsoft Windows</td>
<td>2</td>
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<tr>
<td>CISS 104</td>
<td>Introduction to DOS</td>
<td>1</td>
</tr>
<tr>
<td>CISS 107</td>
<td>DOS Management</td>
<td>1</td>
</tr>
<tr>
<td>CISS 116</td>
<td>Intro Window Prog Visual BASIC</td>
<td>4</td>
</tr>
<tr>
<td>CISS 130</td>
<td>Data Communications</td>
<td>3</td>
</tr>
<tr>
<td>CISS 200</td>
<td>Info Sys Tech/Problem Solving</td>
<td>3</td>
</tr>
<tr>
<td>CISS 235</td>
<td>Microcomputer Hardware Support</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 234</td>
<td>Diversity in the Workplace</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 119</td>
<td>Market/Manage Your Profess Image</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 120</td>
<td>Sales</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 123</td>
<td>Comput Field Sales Internship</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 200</td>
<td>Principles of Marketing</td>
<td>3</td>
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<tr>
<td>MKTG 210</td>
<td>Marketing on the Internet</td>
<td>2</td>
</tr>
<tr>
<td>MKTG 235</td>
<td>Consumer Behavior</td>
<td>2</td>
</tr>
<tr>
<td>SPCH 110</td>
<td>Oral Communic in the Workplace</td>
<td>3</td>
</tr>
<tr>
<td>WRIT 127</td>
<td>Business Writing</td>
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LIMITED CHOICE REQUIREMENTS

<table>
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<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
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<tr>
<td>BUSN 118</td>
<td>CABS 107</td>
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<tr>
<td>CABS 195</td>
<td>CISS 119</td>
<td></td>
</tr>
<tr>
<td>CISS 104</td>
<td>MKTG 119</td>
<td></td>
</tr>
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<td>CISS 107</td>
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<tr>
<td>CISS 116</td>
<td>MKTG 200</td>
<td></td>
</tr>
<tr>
<td>CISS 130</td>
<td>MKTG 235</td>
<td></td>
</tr>
<tr>
<td>CISS 200</td>
<td>SPCH 110</td>
<td></td>
</tr>
<tr>
<td>CISS 235</td>
<td>Lim.Ch.</td>
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</table>

TOTAL: 48 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.

1. Students completing REQUIREMENTS have fulfilled the requirements for the Core area.
2. Choose from CABS-prefix courses of 119 or above and/or CISS-prefix courses not already used to meet degree requirements.
3. Students should confer with a Business Careers program advisor to assure that selection of Limited Choice courses will best fit their career plans.

NOTES

1. BUSN 118: Introduction to Business
2. CISS 104: Introduction to DOS
3. CISS 116: Intro Window Prog Visual BASIC
4. CISS 130: Data Communications
5. CISS 200: Info Sys Tech/Problem Solving
6. CISS 235: Microcomputer Hardware Support
7. MGMT 234: Diversity in the Workplace
8. MKTG 119: Market/Manage Your Profess Image
9. MKTG 120: Sales
10. MKTG 123: Comput Field Sales Internship
11. MKTG 200: Principles of Marketing
12. MKTG 210: Marketing on the Internet
13. MKTG 235: Consumer Behavior
14. SPCH 110: Oral Communic in the Workplace
15. WRIT 127: Business Writing

LIMITED CHOICE REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
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<td>CABS 195</td>
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<tr>
<td>CISS 104</td>
<td>MKTG 119</td>
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</tr>
<tr>
<td>CISS 107</td>
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<td></td>
</tr>
<tr>
<td>CISS 116</td>
<td>MKTG 200</td>
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<tr>
<td>CISS 130</td>
<td>MKTG 235</td>
<td></td>
</tr>
<tr>
<td>CISS 200</td>
<td>SPCH 110</td>
<td></td>
</tr>
<tr>
<td>CISS 235</td>
<td>Lim.Ch.</td>
<td></td>
</tr>
</tbody>
</table>

TOTAL: 12-14 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) 0
- Speech Communication Core Area (See Note 1) 0
- Science/Technology Core Area (See Note 1) 0
- Global Perspectives and Diversity Core Area (See Note 1) 0
- Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.) 0

CHOICE 2: Computer Related (See Note 2)

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUSN 210</td>
<td>Principles of Accounting I</td>
<td>4</td>
</tr>
<tr>
<td>BUSN 229</td>
<td>Public Relations</td>
<td>2</td>
</tr>
<tr>
<td>BUSN 295</td>
<td>Small Business Management</td>
<td>3</td>
</tr>
<tr>
<td>ECON 201</td>
<td>Principles of Economics-Micro</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 220</td>
<td>Principles of Management</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 230</td>
<td>Time and Stress Management</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 130</td>
<td>Retailing</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 140</td>
<td>Introduction to Advertising</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 202</td>
<td>Managerial Marketing</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 204</td>
<td>Marketing Research</td>
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</tbody>
</table>

MINIMUM TOTAL 60

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

**Associate in Business Degree**

**Curriculum Code:** 0190 (Effective Fall 2000–Summer 2005)

Sales/marketing specialists, or sales representatives, sell products to wholesalers, retailers, or consumers, usually on a commission basis. They call on customers, demonstrate products, point out salable features, answer questions, and forward orders. Some sales representatives sell services, rather than products. Graduates of this program are prepared to work in a variety of manufacturing, wholesaling, and retailing environments, as well as in the service sector of our economy. **Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.**

**Prerequisites**

Students should see the Course Descriptions section of this catalog or the Course Schedule for course prerequisite information. Basic skills assessment and advising information may be found on page 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, students may need to complete specific course work in mathematics. For information on how to fulfill all general education requirements, see page 23.

**Information**

Contact the Business Careers Department, Old Central Building, Room 210, telephone number (517) 485-1622.

<table>
<thead>
<tr>
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</tr>
<tr>
<td>CISR 200</td>
<td></td>
<td>Info Sys Tech Problem Solving</td>
<td>3</td>
</tr>
<tr>
<td>LEGL 215</td>
<td></td>
<td>Busn Law I Basic Principles</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 200</td>
<td></td>
<td>Creative Thinking for Business</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 224</td>
<td></td>
<td>Diversity in the Workplace</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 100</td>
<td></td>
<td>Current Issues in Business</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 119</td>
<td></td>
<td>MKTG/Manage Your Profess Image</td>
<td>5</td>
</tr>
<tr>
<td>MKTG 120</td>
<td></td>
<td>Sales</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 122</td>
<td></td>
<td>Field Sales Internship</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 200</td>
<td></td>
<td>Principles of Marketing</td>
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</tr>
<tr>
<td>MKTG 201</td>
<td></td>
<td>Principles of Accounting I</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 221</td>
<td></td>
<td>Consumer Behavior</td>
<td>2</td>
</tr>
<tr>
<td>SPCH 119</td>
<td></td>
<td>Oral Comm in the Workplace</td>
<td>3</td>
</tr>
<tr>
<td>WRIT 127</td>
<td></td>
<td>Business Writing</td>
<td>3</td>
</tr>
</tbody>
</table>

**Limited Choice Requirements**

**TOTAL: 19 CREDITS**

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

**Choice 1:**

<table>
<thead>
<tr>
<th>General Education Core Areas</th>
<th>0 Credits</th>
</tr>
</thead>
</table>

(See the General Education section above)

- Writing Core Area (See Note 1)
- Speech Communication Core Area (See Note 2)
- Science/Technology Core Area (See Note 1)
- Global Perspectives and Diversity Core Area (See Note 1)
- Mathematics Competency (See page 23 for information on how to fulfill this requirement, Course work may be needed.)

**Choice 2:**

<table>
<thead>
<tr>
<th>Sales/Marketing Related (See Note 2)</th>
<th>19 Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCG 201 Principles of Accounting I</td>
<td>4</td>
</tr>
<tr>
<td>ACCG 211 Principles of Accounting II</td>
<td>4</td>
</tr>
<tr>
<td>BUSN 201 International Business</td>
<td>3</td>
</tr>
<tr>
<td>BUSN 229 Public Relations</td>
<td>2</td>
</tr>
<tr>
<td>BUSN 295 Small Business Management</td>
<td>3</td>
</tr>
<tr>
<td>CABS 110 Microsoft Office</td>
<td>3</td>
</tr>
<tr>
<td>ECON 201 Principles of Economics-Micro</td>
<td>3</td>
</tr>
<tr>
<td>ECON 202 Principles of Economics-Macro</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 150 Managing Customer Relations</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 225 Principles of Management</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 229 Organizational Behavior</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 299 Time and Stress Management</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 123 Merchandising</td>
<td>2</td>
</tr>
<tr>
<td>MKTG 140 Introduction to Advertising</td>
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</tbody>
</table>

**Field Sales and Marketing Certificate of Achievement**

**Curriculum Code:** 0249 (Effective Fall 2000–Summer 2005)

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>
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<tr>
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<td>CABS 110</td>
<td></td>
<td>Microsoft Office</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 119</td>
<td></td>
<td>MKTG/Manage Your Profess Image</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 120</td>
<td></td>
<td>Sales</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 122</td>
<td></td>
<td>Field Sales Internship</td>
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</tr>
<tr>
<td>MKTG 200</td>
<td></td>
<td>Principles of Marketing</td>
<td>3</td>
</tr>
<tr>
<td>SPCH 119</td>
<td></td>
<td>Oral Comm in the Workplace</td>
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</tr>
<tr>
<td>WRIT 127</td>
<td></td>
<td>Business Writing</td>
<td>3</td>
</tr>
</tbody>
</table>

**Limited Choice Requirements**

**TOTAL: 6 CREDITS**

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

**Choice 1:**

| Marketing Related (See Note 1) | 6 Credits |

(See Note 1)

**Minimum Total**

| NOTE                                           | 30       |

1. Choose any course with a MKTG prefix not already used to meet certificate requirements.

**Suggested Course Sequence**

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

ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 0204 (Effective Fall 2000–Summer 2005)

Marketing is the set of activities that aims to satisfy the customer while making a profit. It is concerned with determining need and meeting demand by making goods and services known, available, and affordable. Entry-level personnel may require time in sales before internal promotion into marketing management positions. Graduates of this program are prepared to work in nearly every type of business and organization today. Traditional product marketing management is giving way to areas like nonprofit organization marketing, leading to a diverse job opportunity picture. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES

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

GENERAL EDUCATION

General education is an important part of this program and includes many mathematics competency requirements. To fulfill the mathematics competency requirements, students must complete the specific course work in mathematics. If information on how to fulfill all general education requirements is needed, see page 23.

INFORMATION

Contact the Business Careers Department, Old Central Building, Room 210, telephone number (517) 483-1502.

REQUIREMENTS

<table>
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<td>BUSN 229</td>
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<td>3</td>
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<tr>
<td>CABS 110</td>
<td>Microsoft Office</td>
<td>3</td>
</tr>
<tr>
<td>GRIB 290</td>
<td>Info Tech/Problem Solving</td>
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<td>MKTG 100</td>
<td>Current Issues in Business</td>
<td>3</td>
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<td>Market/Manage Your Profess Image</td>
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</tr>
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</tr>
<tr>
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</tr>
<tr>
<td>MKTG 140</td>
<td>Introduction to Advertising</td>
<td>3</td>
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<tr>
<td>MKTG 200</td>
<td>Principles of Marketing</td>
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</tr>
<tr>
<td>MKTG 202</td>
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<td>MKTG 204</td>
<td>Marketing Research</td>
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<td>MKTG 221</td>
<td>Consumer Behavior</td>
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<tr>
<td>SPCH 110</td>
<td>Oral Communication in the Workplace</td>
<td>3</td>
</tr>
<tr>
<td>WRT 127</td>
<td>Business Writing</td>
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LIMITED CHOICE REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
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<tr>
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<td>MKTG 100</td>
<td>Market/Manage Your Profess Image</td>
<td>2</td>
</tr>
<tr>
<td>MKTG 120</td>
<td>Sales</td>
<td>2</td>
</tr>
<tr>
<td>MKTG 130</td>
<td>Retailing</td>
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</tr>
<tr>
<td>MKTG 200</td>
<td>Principles of Marketing</td>
<td>2</td>
</tr>
<tr>
<td>MKTG 202</td>
<td>Managerial Marketing</td>
<td>2</td>
</tr>
<tr>
<td>MKTG 221</td>
<td>Consumer Behavior</td>
<td>2</td>
</tr>
<tr>
<td>SPCH 110</td>
<td>Oral Communication in the Workplace</td>
<td>2</td>
</tr>
<tr>
<td>WRT 127</td>
<td>Business Writing</td>
<td>2</td>
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</tbody>
</table>

MARKETING CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 0220 (Effective Fall 2000–Summer 2005)

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>CODE</th>
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<td>MKTG 119</td>
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<td>MKTG 130</td>
<td>Retailing</td>
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<td>Principles of Marketing</td>
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</tr>
<tr>
<td>MKTG 202</td>
<td>Managerial Marketing</td>
<td>2</td>
</tr>
<tr>
<td>MKTG 221</td>
<td>Consumer Behavior</td>
<td>2</td>
</tr>
<tr>
<td>SPCH 110</td>
<td>Oral Communication in the Workplace</td>
<td>2</td>
</tr>
</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>CODE</th>
<th>TITLE</th>
<th>CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUSN 201</td>
<td>Principles of Accounting</td>
<td>4</td>
</tr>
<tr>
<td>BUSN 254</td>
<td>Introduction to Investments</td>
<td>2</td>
</tr>
<tr>
<td>BUSN 255</td>
<td>Small Business Management</td>
<td>3</td>
</tr>
<tr>
<td>ECON 201</td>
<td>Principles of Economics-Micro</td>
<td>3</td>
</tr>
<tr>
<td>ECON 202</td>
<td>Principles of Economics-Macro</td>
<td>3</td>
</tr>
<tr>
<td>LEGL 215</td>
<td>Bus Law 1 Basic Principles</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 180</td>
<td>Managing Customer Relations</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 200</td>
<td>Creative Thinking for Business</td>
<td>3</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL CREDITS: 60

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>SEMESTER</th>
<th>REQUIREMENTS</th>
<th>CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>BUSN 118, MGMT 234, BUSN 229, MGT 200, MGT 120</td>
<td>13</td>
</tr>
<tr>
<td>II</td>
<td>MGT 119, MGT 130, MGT 140, MGT 202, MGT 221, SPCH 110, Lim.Ch.</td>
<td>13</td>
</tr>
<tr>
<td>III</td>
<td>BUSN 118, MGMT 234, BUSN 229, MGT 200, MGT 120, MGT 130</td>
<td>13</td>
</tr>
<tr>
<td>IV</td>
<td>MGT 119, MGT 140, MGT 202, MGT 221, SPCH 110, Lim.Ch.</td>
<td>13</td>
</tr>
</tbody>
</table>

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

Curriculum Code: 0184 (Effective Fall 2000–Summer 2005)

Media Technology is an integrated program that prepares students for professional careers in audio, video, and television/video. Audio professionals work in audio production, video 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, and all-news and sports announcing, and station operations. Television/video professionals work in producing, directing, technical operations, video editing in broadcast and non-broadcast settings. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

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

GENERAL EDUCATION
General education is an important part of this program and includes a mathematics competency requirement. To fulfill the mathematics competency requirement, students may need to complete specific courses in mathematics. For information on how to fulfill all general education requirements, see page 23.

INFORMATION
Contact Media Technology Program, Technology Learning Center, Room 123, telephone number (517) 483-1817.

REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CISB 100</td>
<td>Intro Computer Info Systems (See Note 1)</td>
<td>3</td>
</tr>
<tr>
<td>MTEC 110</td>
<td>Intro Broadcast/Elec Media</td>
<td>4</td>
</tr>
<tr>
<td>MTEC 120</td>
<td>Audio Production I</td>
<td>3</td>
</tr>
<tr>
<td>MTEC 130</td>
<td>Radio Production I</td>
<td>3</td>
</tr>
<tr>
<td>MTEC 150</td>
<td>TV Production I</td>
<td>4</td>
</tr>
<tr>
<td>MTEC 240</td>
<td>Script/Screenwriting for Media</td>
<td>3</td>
</tr>
<tr>
<td>MTEC 243</td>
<td>Ethics/Social Impact of Media</td>
<td>3</td>
</tr>
<tr>
<td>MTEC 266</td>
<td>Media Internship (See Note 2)</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>
<td>4</td>
</tr>
</tbody>
</table>

LIMITED CHOICE REQUIREMENTS

| TOTAL: 35 CREDITS |

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

CHOICE 1: General Education Core Areas

| 6 Credits |

Writing Core Area (See Note 3)

| 0 |

Speech Communication Core Area (See Note 3)

| 0 |

Science/Technology Core Area

| 3 |

Global Perspectives and Diversity Core Area

| 3 |

Mathematics Competency. (See page 23 for information on how to fulfill this requirement. Course work may be needed.)

CHOICE 2: Media Specialty (Choose one subchoice)

| 17–22 Credits |

Subchoice 2A: Audio

| MTEC 121 | Audio Recording I | 4 |
| MTEC 122 | Audio Recording II | 3 |
| MTEC 220 | Sound Reinforcement | 4 |
| MTEC 221 | Sound Reinforcement II | 4 |
| MTEC 223 | Sound Reinforcement Praculum | 2 |

Subchoice 2B: Radio

| MTEC 230 | Radio Production I | 4 |
| MTEC 231 | Radio Programming and Promo | 3 |
| MTEC 232 | Radio Workshop (See Note 4) | 2 |
| MTEC 241 | Radio News Reporting | 3 |
| MTEC 242 | Radio Sales and Marketing | 3 |

Subchoice 2C: Video/Television

| MTEC 152 | Video Production Techniques | 3 |
| MTEC 153 | Video Post-Production Techniques | 3 |
| MTEC 250 | TV Production I | 4 |
| MTEC 251 | Advanced Field Production | 4 |
| MTEC 252 | Lighting for Television/Video | 3 |
| MTEC 254 | Electronic Presentation Graphics | 3 |
| MTEC 255 | Video Workshop (See Note 5) | 2 |

Subchoice 2D: General Media Occupations (See Note 6)

| CHOICE 3: Media-Related (See Note 7) | 4 Credits |

MINIMUM TOTAL: 62

NOTES

1. Students having demonstrated computer proficiency should consult their program advisor for alternatives to CISB 100.

2. Enrollment in MTEC 295 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 program.

4. MTEC 292 must be taken two times for a total of 4 credits. A Media Technology major may not apply more than four credits in MTEC 292 toward this degree.

5. A Media Technology major may not apply more than four credits in MTEC 295 toward this degree.

6. 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 Media Technology Program Advisor regarding course selection.

7. Students must select courses with the approval of a Media Technology advisor. This Choice allows students to select from additional Media courses (MTEC prefixes) or other courses that will augment their Media training.

SUGGESTED COURSE SEQUENCE

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

<table>
<thead>
<tr>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
</tr>
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<tbody>
<tr>
<td>MTEC 110</td>
<td>CISB 100</td>
<td>MTEC 240</td>
<td>MTEC 286</td>
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<tr>
<td>MTEC 120</td>
<td>WRIT 121</td>
<td>MTEC 243</td>
<td>SPCH 120</td>
</tr>
<tr>
<td>MTEC 130</td>
<td>Lim.Ch.</td>
<td>Lim.Ch.</td>
<td>Lim.Ch.</td>
</tr>
<tr>
<td>MTEC 150</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>

Students are responsible for completing all requirements as stated. The only official documentation of program completion status is an audit conducted by the Registrar's Office that is initiated when students apply for a degree or certificate. Students are expected to apply one semester prior to the semester they intend to graduate.
## MOTION PICTURE DIRECTION
### ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 0900 (Effective Fall 2000–Summer 2005)

Motion pictures bring together elements from all the other arts: writing, photography, theater, music, dance, and all the visual arts. The Motion Picture Direction program gives students extensive practical experience working with other artists and technicians to create dramatic, documentary, experimental, or animated films.

The degree is designed for students who wish to become screenwriters, directors, and film editors, the people who guide the film story-telling process. Entry-level jobs include production assistants as well as apprentices and interns in specialized roles with independent film production companies, advertising firms, and major film studios. Not all courses in this program transfer to all colleges.

Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

### PREREQUISITES

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

### GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics. For information on how to fulfill all general education requirements, see page 23.

### INFORMATION

Contact the Art, Design and Multimedia Program, Academic and Office Facility, Room 314, telephone number (517) 483-1476.

### REQUIREMENTS

<table>
<thead>
<tr>
<th>CORE</th>
<th>TITLE</th>
<th>CREDITS</th>
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</thead>
<tbody>
<tr>
<td>ENGL 240</td>
<td>Tha Film as Art</td>
<td>4</td>
</tr>
<tr>
<td>FILM 118</td>
<td>Film Production I</td>
<td>4</td>
</tr>
<tr>
<td>FILM 226</td>
<td>Film Production II</td>
<td>4</td>
</tr>
<tr>
<td>FILM 227</td>
<td>Film Production III</td>
<td>4</td>
</tr>
<tr>
<td>FILM 296</td>
<td>Motion Picture Portfolio</td>
<td>4</td>
</tr>
<tr>
<td>IMAG 111</td>
<td>Intro to Photographic Tech</td>
<td>4</td>
</tr>
<tr>
<td>WRIT 121</td>
<td>Composition I</td>
<td>4</td>
</tr>
</tbody>
</table>

**TOTAL: 28 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 (See Note 1) 3 Credits
- Speech Communication Core Area 3
- Science/Technology Core Area 3
- Global Perspectives and Diversity Core Area 3
- Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)

**TOTAL: 9 CREDITS**

**CHOICE 2: Media Issues and Arts**

- ARTS 102 2-Dimensional Design 3
- ARTS 171 Computer Graphics/Photography 3
- FILM 203 Topics in Film/Animation 3
- FILM 281 Motion Picture Internship (See Note 2) 3
- IMAG 204 Topics in Imaging Soft-Express 3
- IMAG 207 Imaging Issues 3
- IMAG 208 Input Processes 3
- MTEC 120 Audio Production I 4
- MTEC 152 Video Production Techniques 3
- MTEC 153 Video Post-Production Techniques 3
- MTEC 243 Ethics/Social Impact of Media 3
- STEC 140 Theatrical Make-Up/Wardrobe 3
- THEA 120 Introduction to Acting 2
- WRIT 282 Forum for Authors 3
- WRIT 285 Creative Writing I 3

**MINIMUM TOTAL:**

- 60 CREDITS

### NOTES

1. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.
2. Students should try to obtain internship experience, if possible.

### 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>FILM 118</td>
<td>ENGL 240</td>
<td>FILM 227</td>
<td>FILM 290</td>
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<tr>
<td>IMAG 111</td>
<td>FILM 226</td>
<td>Lim.Ch.</td>
<td>Lim.Ch.</td>
</tr>
<tr>
<td>WRIT 121</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>
MOTION PICTURE PRODUCTION
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 0992 (Effective Fall 2000–Summer 2005)

Since the first film screening in 1905, motion pictures have grown into one of the
world's most influential communication media and the United States' second
leading export. The Motion Picture Production degree gives students extensive hands-on
experience in creative and technical filmmaking skills, and it provides the
opportunity to build a demonstration reel showcasing a student's ability. Filmmakers
ever work in teams, each member specializing in one field such as cinematography, sound recording, lighting, special effects, or animation. While most films are produced by California companies, there are motion pictures made in every
state. Filmmakers work as independent contractors or find employment in companies that rent facilities, sell equipment, or contract services for film production.

Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in
any course.

PREREQUISITES
Students should see the Course Descriptions section of this catalog or the Course
Schedule for course prerequisites 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 mathemat-
ics competency requirement. To fulfill the mathematics competency require-
ment, students may need to complete specific course work in mathematics.
For information on how to fulfill all general education requirements, see page 23.

INFORMATION
Contact the Art, Design and Multimedia Program, Academic and Office Facility,
Room 314, telephone number (517) 483-1476.

REQUIREMENTS

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<th>CODE</th>
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<tr>
<td>ENGL 240</td>
<td>The Film as Art</td>
<td>4</td>
</tr>
<tr>
<td>FILM 116</td>
<td>Film Production I</td>
<td>4</td>
</tr>
<tr>
<td>FILM 226</td>
<td>Film Production II</td>
<td>4</td>
</tr>
<tr>
<td>FILM 227</td>
<td>Film Production III</td>
<td>4</td>
</tr>
<tr>
<td>FILM 290</td>
<td>Motion Picture Portfolio</td>
<td>4</td>
</tr>
<tr>
<td>IMAG 111</td>
<td>Intro to Photographic Tech I</td>
<td>4</td>
</tr>
<tr>
<td>IMAG 112</td>
<td>Design for Imaging Tech</td>
<td>3</td>
</tr>
<tr>
<td>IMAG 113</td>
<td>Lighting Concepts/Applications</td>
<td>3</td>
</tr>
<tr>
<td>IMAG 114</td>
<td>Intro to Photographic Color Tech</td>
<td>3</td>
</tr>
<tr>
<td>IMAG 117</td>
<td>Intro to Photographic Tech II</td>
<td>4</td>
</tr>
<tr>
<td>MTEC 120</td>
<td>Audio Production I</td>
<td>4</td>
</tr>
<tr>
<td>WRIT 121</td>
<td>Composition I</td>
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LIMITED CHOICE REQUIREMENTS

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<tr>
<th>TITLE</th>
<th>TOTAL: 15 CREDITS</th>
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<tr>
<td>General Education Core Areas</td>
<td>6 Credits</td>
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<tr>
<td>Writing Core Area (See Note 1)</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 2)</td>
<td>0</td>
</tr>
<tr>
<td>Global Perspectives and Diversity Core Area</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)</td>
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CHOICE 2: Media Issues and Technology

<table>
<thead>
<tr>
<th>TITLE</th>
<th>CREDITS</th>
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<tr>
<td>Computer Graphics/Photography</td>
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</tr>
<tr>
<td>Employ/Burn Issues for Artists</td>
<td>1</td>
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<tr>
<td>Soldering/Desoldering</td>
<td>1</td>
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<tr>
<td>Electrical Safety Practice</td>
<td>1</td>
</tr>
<tr>
<td>Topics in Film/Animation</td>
<td>3</td>
</tr>
<tr>
<td>Motion Picture Internship (See Note 3)</td>
<td>3</td>
</tr>
<tr>
<td>Topics in Imaging Self-Express</td>
<td>3</td>
</tr>
<tr>
<td>Imaging Issues</td>
<td>3</td>
</tr>
<tr>
<td>Input Processes</td>
<td>3</td>
</tr>
<tr>
<td>Internship</td>
<td>3</td>
</tr>
<tr>
<td>Audio Recording</td>
<td>4</td>
</tr>
<tr>
<td>Ethical/Social Impact of Media</td>
<td>3</td>
</tr>
</tbody>
</table>

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SUGGESTED COURSE SEQUENCE

1. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.
2. For students completing all requirements for this program (including IMAG 114), the Science/Technology Core Area requirement is waived.
3. Students should try to obtain internship experience, if possible.

<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>FILM 118</td>
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<td>IMAG 114</td>
<td>FILM 227</td>
</tr>
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<td>IMAG 112</td>
<td>IMAG 117</td>
<td>FILM 227</td>
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<td>IMAG 113</td>
<td>WRIT 121</td>
<td>MTEC 120</td>
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<tr>
<td></td>
<td>WRIT 121</td>
<td>Lim.Ch.</td>
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MOTION PICTURE PRODUCTION
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 0901 (Effective Fall 2000–Summer 2005)

This program is designed for students who already have a degree or who are
completing a degree in another area and wish to gain technical and creative hands-on experience to build a demonstration reel showcasing their skills.

REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
<th>TITLE</th>
<th>TOTAL: 28 CREDITS</th>
</tr>
</thead>
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<tr>
<td>ENGL 240</td>
<td>The Film as Art</td>
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<td>FILM 118</td>
<td>Film Production I</td>
<td>4</td>
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<tr>
<td>FILM 226</td>
<td>Film Production II</td>
<td>4</td>
</tr>
<tr>
<td>FILM 227</td>
<td>Film Production III</td>
<td>4</td>
</tr>
<tr>
<td>IMAG 111</td>
<td>Intro to Photographic Tech I</td>
<td>4</td>
</tr>
<tr>
<td>MTEC 120</td>
<td>Audio Production I</td>
<td>4</td>
</tr>
<tr>
<td>WRIT 121</td>
<td>Composition I</td>
<td>4</td>
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LIMITED CHOICE REQUIREMENTS

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<tr>
<th>TITLE</th>
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<td>Practical Production</td>
<td>3–4 Credits</td>
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<tr>
<td>Motion Picture Internship (See Note 1)</td>
<td>3</td>
</tr>
<tr>
<td>Motion Picture Portfolio</td>
<td>4</td>
</tr>
</tbody>
</table>

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

MINIMUM TOTAL

1. Students should try to obtain internship experience, if possible.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out which 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>III</th>
<th>IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>FILM 118</td>
<td>ENGL 240</td>
<td>MTEC 120</td>
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<tr>
<td>IMAG 111</td>
<td>FILM 226</td>
<td>Lim.Ch.</td>
</tr>
<tr>
<td>IMAG 112</td>
<td>IMAG 117</td>
<td>Lim.Ch.</td>
</tr>
<tr>
<td>IMAG 113</td>
<td>WRIT 121</td>
<td>Lim.Ch.</td>
</tr>
<tr>
<td>WRIT 121</td>
<td>FILM 227</td>
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# Administrative Assistant
## Associate in Business Degree

**Curriculum Code:** 0114 (Effective Fall 2000–Summer 2005)

The administrative assistant curriculum provides skills in office procedures, word processing, spreadsheets, database management, electronic mail, and formatting documents. The administrative assistant is generally responsible for coordinating office functions and is characterized by varied skills and flexibility. Specific duties may include activities related to communications, personnel, budget, record management, and computer. Sample job titles include office manager, administrative secretary, and administrative assistant. Employment opportunities may be found in almost every company.

## Prerequisites

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

## General Education

General education is an important part of this program and includes a mathematics competency requirement. To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics. For information on how to fulfill all general education requirements, see page 23.

## Information

Contact the Business Careers Department, Old Central Building, Room 210, telephone number (517) 483-1322.

### Requirements

<table>
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<td>CABS 113</td>
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</tr>
<tr>
<td>CABS 118</td>
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<tr>
<td>CISB 102</td>
<td>Internet Literacy</td>
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<tr>
<td>MATH 117</td>
<td>Math for Business</td>
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<tr>
<td>OADM 102</td>
<td>Editing Business Documents</td>
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</tr>
<tr>
<td>OADM 195</td>
<td>Human Behavior in Work Place</td>
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<tr>
<td>OADM 200</td>
<td>Critical Thinking</td>
<td>3</td>
</tr>
<tr>
<td>OADM 215</td>
<td>Records and Info Management</td>
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<td>OADM 220</td>
<td>Administrative Office Mgmt</td>
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<td>OADM 240</td>
<td>Office Internship</td>
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<td>OADM 275</td>
<td>Cultural Differences in Business</td>
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<td>WRIT 114</td>
<td>Business English</td>
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</tr>
<tr>
<td>WRIT 127</td>
<td>Business Writing</td>
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</table>

### Limited Choice Requirements

| TOTAL: 15–16 CREDITS |

**Choice 1:** General Education Core Areas

(See the General Education section above)

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

**Choice 2:** Office Administration Related

- LEGL 215 Business Law I, Basic Principles 3
- OADM 110 Machine Transcription 3
- OADM 203 Professional Office Procedures 2

**Choice 3:** Computer Related

- CABS 104 Skillbuilding for Computers 2
- CABS 126 Excel 2
- CABS 133 Microsoft Access Database 2
- CABS 182 Microsoft PowerPoint/Windows 2
- CABS 219 Advanced Microsoft Word 2

**Minimum Total:** 50

### Notes

1. Students completing REQUIREMENTS have fulfilled the requirements for this core area.
2. It is recommended that students entering this curriculum have keyboarding and Windows experience. This experience may come from life or work experience. CABS 100 seminars, CABS 101, or CABS 195.

### Suggested Course Sequence

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

<table>
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<tr>
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<td>Lim.Ch.3</td>
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</tbody>
</table>

Students are responsible for completing all requirements as stated. The only official documentation of program completion status is an audit conducted by the Registrar's office that is initiated when students apply for a degree or certificate. Students are expected to apply one semester prior to the semester they intend to graduate.
### LEGAL SECRETARY
### ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 0207 (Effective Fall 2000–Summer 2005)

Legal secretaries are part of a law office team and report to one or more attorneys. Legal secretaries take dictation and are skilled in the use of computers and transcription equipment. They prepare legal papers and correspondence of a legal nature, such as summonses, complaints, motions, and subpoenas. Graduates of this program are prepared to work in law offices, courts, public agencies, and in legal departments of larger businesses and organizations.

**PREREQUISITES**

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

**GENERAL EDUCATION**

General education is an important part of this program and includes a mathematics competency requirement. To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics. For information on how to fulfill all general education requirements, see page 23.

**INFORMATION**

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

<table>
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<td>CABS 118</td>
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<td>Bus Law I, Basic Principles</td>
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<td>OADM 102</td>
<td>Editing Business Documents</td>
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<td>Critical Thinking</td>
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<td>OADM 206</td>
<td>Legal Vocabulary and Form Prep</td>
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<td>Records and Info Management I</td>
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<td>Cultural Differences in Bus</td>
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<td>WRIT 114</td>
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<td>WRIT 127</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 6 Credits

| (See the GENERAL EDUCATION section above) |
|-------------------------------|---|
| Writing Core Area (See Note 1) | 0 |
| Speech Communication Core Area | 3 |
| Science/Technology Core Area | 3 |
| Global Perspectives and Diversity Core Area (See Note 1) | 0 |
| Mathematics Competency (See Note 1) | |

**CHOICE 2:** Office Administration Related 2–3 Credits

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**CHOICE 3:** Computer Related 4–5 Credits

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<td>CABS 126</td>
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<td>CABS 128</td>
<td>Microsoft Access Database</td>
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<td>CABS 182</td>
<td>Microsoft Powerpoint/Windows</td>
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<td>CABS 219</td>
<td>Advanced Microsoft Word</td>
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<td>GISB 102</td>
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</table>

**MINIMUM TOTAL** 50

**NOTES**

1. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.
2. It is recommended that students entering this curriculum have keyboarding and Windows experience. This experience may come from life or work experience, CABS 103 seminars, CABS 101, or CABS 195.

Students are responsible for completing all requirements as stated. The only official documentation of program completion status is an audit conducted by the Registrar's Office that is initiated when students apply for a degree or certificate. Students are expected to apply one semester prior to the semester they intend to graduate.

**LANSING COMMUNITY COLLEGE CATALOG 2000–2001**
MEDICAL ADMIN ASSISTANT
ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 0185 (Effective Fall 2000-Summer 2005)

The medical administrative assistant is a specialist in the healthcare profession, the second-largest industry in the nation. The need for medical administrative assistants is expected to expand at a tremendous rate due in part to increased specialization in medical treatments and in technological advances in the diagnosis and treatment of diseases. Medical administrative assistants facilitate the work of physicians, researchers, and other health team professionals by managing health information, transcribing medical dictation, coding and billing for medical procedures, scheduling medical appointments and procedures, and arranging patient hospitalizations. Job opportunities are readily available in hospitals, medical centers, medical clinics, insurance companies, managed care organizations, and other private and public sector healthcare settings. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

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

GENERAL EDUCATION
General education is an important part of this program and includes a mathematics competency requirement. To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics. For information on how to fulfill all general education requirements, see page 23.

INFORMATION
Contact the Business Careers Department, Old Central Building, Room 215, telephone number (517) 483-1522.

REQUIREMENTS

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<td>Introductory Anat &amp; Physiology</td>
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<td>CAB 113</td>
<td>Microsoft Word Office/ Inf Key</td>
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<td>CAB 118</td>
<td>Adv Microsoft Word for Office</td>
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<td>Medical Insurance Billing I</td>
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<td>CHSE 124</td>
<td>Medical Insurance Billing II</td>
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<td>HUMS 268</td>
<td>Semi-Biblical Issues in Medicine</td>
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<td>Matt for Business</td>
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<td>OADM 187</td>
<td>Medical Vocabulary</td>
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<td>OADM 188</td>
<td>Health Information Management</td>
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<td>OADM 207</td>
<td>Medical Transcription</td>
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<td>OADM 220</td>
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<td>OADM 222</td>
<td>Advanced Medical Transcription</td>
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<td>OADM 275</td>
<td>Cultural Differences in Busn</td>
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<td>WRIT 114</td>
<td>Business English</td>
<td>3</td>
</tr>
<tr>
<td>WRIT 127</td>
<td>Business 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 | 6 Credits
(See the GENERAL EDUCATION section above)

Writing Core Area (See Note 1) | 0
Speech Communication Core Area | 3
Science/Technology Core Area | 3
Global Perspectives and Diversity Core Area (See Note 1) | 0
Mathematics Competency (See Note 1) | 0

MINIMUM TOTAL | 64.5

NOTES
1. Students completing REQUIREMENTS have fulfilled the requirements for the Core area.
2. It is recommended that students entering this curriculum have keyboarding and Windows experience. This experience may come from life or work experience. CAB 100 seminars, CAB 101, CAB 104, or CAB 195

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

**Curriculum Code:** O756 (Effective Fall 2000–Summer 2005)

A medical transcriptionist is a medical language specialist who interprets and transcribes dictation by physicians and other healthcare professionals in order to document patient care and facilitate delivery of healthcare services. Transcription areas may include patient assessment, workup, therapeutic procedures, clinical course, diagnosis, and prognosis. The medical transcriptionist can choose from a variety of employment options including hospitals, medical centers, medical clinics, insurance companies, managed care organizations, medical transcription services, and home office settings. Medical transcription is designated as one of the ten start-up businesses for the future. The employment outlook for medical transcriptionists is bright, with many opportunities for success and personal growth. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

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

### General Education
General education is an important part of this program and includes a mathematics competency requirement. To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics. For information on how to fulfill all general education requirements, see page 23.

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

### Requirements

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<tr>
<td>CABS 118</td>
<td>Adv Microsoft Word for Office</td>
<td>4</td>
</tr>
<tr>
<td>CHSE 123</td>
<td>Medical Insurance Billing I</td>
<td>3</td>
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<tr>
<td>HUMS 265</td>
<td>Semi-Ethical Issues in Medicine</td>
<td>3</td>
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<tr>
<td>MATH 117</td>
<td>Math for Business</td>
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<td>Editing Business Documents</td>
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<td>Health Information Management</td>
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<td>OADM 267</td>
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</tr>
<tr>
<td>WRIT 127</td>
<td>Business Writing</td>
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### Limited Choice Requirements

**TOTAL: 13–14 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>Writing Core Area (See Note 1)</th>
<th>6 Credits</th>
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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>
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<tr>
<td>Global Perspectives and Diversity Core Area (See Note 1)</td>
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<td>Mathematics Competency (See Note 1)</td>
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### Choice 2:

Computer Related

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<th>Skillbuilding for Computers</th>
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<td>Microsoft Office</td>
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<td>Excel</td>
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<td>Microsoft Access Database</td>
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<td>Advanced Microsoft Word</td>
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</tr>
<tr>
<td>Internet Literacy</td>
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### Choice 3:

Business Related (See Note 3)

| Practical Accounting Non-Major | 3 Credits |
| Introductions to Business     | 3         |
| Principles of Management      | 3         |
| Principles of Marketing       | 3         |

### Minimum Total

**62 Credits**

### Notes

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

2. It is recommended that students entering this curriculum have keyboarding and Windows experience. This experience may come from life or work experience, CABS 160 seminars, CABS 101, or CABS 195.

3. Students may also choose a maximum of two credits total from the T.I.M.E. Series (course codes OADM 240 through OADM 279).

### Suggested Course Sequence

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

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<thead>
<tr>
<th>I</th>
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<tr>
<td>ANAT 145</td>
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Students are responsible for completing all requirements as stated. The only official documentation of program completion status is an audit conducted by the Registrar's Office that is initiated when students apply for a degree or certificate. Students are expected to apply one semester prior to the semester they intend to graduate.
OFFICE CAREERS

2000-2001 Catalog Lansing Community College

OFFICE ASSISTANT
CERTIFICATE OF COMPLETION

Curriculum Code: 2789 (Effective Fall 2000–Summer 2005)

Students completing this program are prepared for entry-level positions in an office. Training is focused on basic computer skills, editing documents, general office procedures, and internet usage. Additional training will enhance an individual’s employment and advancement opportunities.

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

INFORMATION
Contact the Business Careers Department, Old Central Building, Room 210, telephone number (517) 483-1822.

REQUIREMENTS

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<td>OADM 102</td>
<td>Editing Business Documents</td>
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<tr>
<td>OADM 203</td>
<td>Professional Office Procedures</td>
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TOTAL: 14 CREDITS

NOTE
1. It is recommended that students entering this curriculum have keyboarding and Windows experience. This experience may come from life or work experience, CABS 100 seminars, CABS 101, CABS 104 or CABS 105.

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.

| CABS 110 |
| CABS 113 |
| CISS 102 |
| OADM 102 |
| OADM 203 |

OFFICE SPECIALIST: COMP APPS
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 0924 (Effective Fall 2000–Summer 2005)

An office specialist is skilled in the use of word processing, database, spreadsheet, and graphics software. Responsibilities include office procedures, business document preparation, proofreading, records management, and internet usage. Additional training will enhance an individual’s employment and advancement opportunities.

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

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

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<td>CABS 125</td>
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<td>CABS 133</td>
<td>Microsoft Access Database</td>
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<td>OADM 195</td>
<td>Human Behavior in Workplace</td>
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<td>Professional Office Procedures</td>
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<tr>
<td>OADM 215</td>
<td>Records and Info Management I</td>
<td>3</td>
</tr>
<tr>
<td>OADM 240</td>
<td>Office Internship</td>
<td>3</td>
</tr>
<tr>
<td>WRIT 114</td>
<td>Business English</td>
<td>3</td>
</tr>
</tbody>
</table>

TOTAL: 32 CREDITS

NOTE
1. It is recommended that students entering this curriculum have keyboarding and Windows experience. This experience may come from life or work experience, CABS 100 seminars, CABS 101, CABS 104, or CABS 105.

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.

| ACCG 100 | CABS 106 |
| CABS 113 | CABS 103 |
| CABS 182 | CISS 102 |
| OADM 105 | OADM 102 |
| OADM 203 | OADM 215 |
| WRIT 114 | OADM 240 |

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

Curriculum Code: 0195 (Effective Fall 2000–Summer 2005)

Records and information management specialists account for and control an organization's information records. They record, store, and retrieve information and data such as correspondence, invoices, roolets, and other database files using various manual and computerized data storage, retrieval, and filing systems. Graduates of this program are prepared to work in both government and business sectors. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES

Students should see the Course Descriptions section of this catalog or the Course Schedule for course prerequisite information. Basic skills assessment and 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 require- ment, students may need to complete specific course work in mathematics. For information on how to fulfill all general education requirements, see page 23.

INFORMATION

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

REQUIREMENTS

<table>
<thead>
<tr>
<th>COURSE</th>
<th>TITLE</th>
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</tr>
</thead>
<tbody>
<tr>
<td>CABS 113</td>
<td>Microsoft Word Office/Int. Key</td>
<td>4</td>
</tr>
<tr>
<td>CABS 133</td>
<td>Microsoft Access Database</td>
<td>2</td>
</tr>
<tr>
<td>LEGL 215</td>
<td>Basic 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 Work Place</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 Info Management I</td>
<td>3</td>
</tr>
<tr>
<td>OADM 216</td>
<td>Records and Info Management II</td>
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<tr>
<td>OADM 220</td>
<td>Administrative Office Mgmt</td>
<td>4</td>
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<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>WRIT 114</td>
<td>Business English</td>
<td>3</td>
</tr>
<tr>
<td>WRIT 127</td>
<td>Business Writing</td>
<td>3</td>
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</table>

TOTAL: 44 CREDITS

LIMITED CHOICE REQUIREMENTS

TOTAL: 16–18 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)

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

5 Credits

CHOICE 2: Office Administration Related

- ACCG 100 Practical Accounting for Non-Major
- BUSN 116 Introduction to Business
- MGMT 205 Principles of Management
- OADM 203 Professional Office Procedures

5–6 Credits

CHOICE 3: Computer Related

- CABS 110 Microsoft Office
- CABS 126 Excel
- CABS 162 Microsoft Powerpoint/Windows
- CABS 232 Advanced Microsoft Access
- QISB 102 Internet Literacy

5–6 Credits

MINIMUM TOTAL

60 CREDITS

NOTES

1. Students completing REQUIREMENTS have fulfilled the requirements for this Cora area.
2. It is recommended that students entering this curriculum have keyboarding and Windows experience. This experience may come from life or work experience, CABS 100 Seminars, OADM 101, OADM 104, or OADM 195.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out which 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 to help with adjustments.

<table>
<thead>
<tr>
<th>I</th>
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<tr>
<td>CABS 113</td>
<td>CABS 133</td>
<td>LEGL 215</td>
<td>MATH 117</td>
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<td>OADM 102</td>
<td>OADM 101</td>
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<td>OADM 215</td>
<td>OADM 216</td>
<td>OADM 240</td>
<td>Lim.Ch.1</td>
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<td>WRIT 114</td>
<td>OADM 220</td>
<td>WRIT 127</td>
<td>Lim.Ch.2</td>
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<tr>
<td>Lim.Ch.1</td>
<td>Lim.Ch.3</td>
<td>Lim.Ch.2</td>
<td>Lim.Ch.3</td>
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</table>
## Performing Arts

### Dance Associate in Applied Arts Degree

**Curriculum Code:** 0118 (Effective Fall 2000-Summer 2005)

This degree program provides solid technical and performance training for both the transfer and the career student. Because public performance is a critical element 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. Student must pass jury proficiency exam and submit a research paper prior to graduation. For information regarding the jury, please contact Dance Load Faculty at 483-1018. The Dance Career 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 before enrolling in any course.

### Prerequisites

Students should see the Course Descriptions section of this catalog or the Course Schedule for course prerequisite information. Basic skills assessment and advising information may be found on page 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, students may need to complete specific course work in mathematics. For information on how to fulfill all general education requirements, see page 23.

### Information

Contact the Humanities and Performing Arts Department, Arts and Sciences Building, Room 225, telephone number (517) 483-1018.

### Requirements

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<thead>
<tr>
<th>Code</th>
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</thead>
<tbody>
<tr>
<td>DANC 125</td>
<td>Dance Improvisation</td>
<td>2</td>
</tr>
<tr>
<td>DANC 126</td>
<td>Choreography</td>
<td>3</td>
</tr>
<tr>
<td>DANC 191</td>
<td>Dance History</td>
<td>3</td>
</tr>
<tr>
<td>DANC 193</td>
<td>Dance Anatomy</td>
<td>3</td>
</tr>
<tr>
<td>HUMS 120</td>
<td>Western Art and Music History</td>
<td>4</td>
</tr>
<tr>
<td>MUSC 198</td>
<td>Music Appreciation</td>
<td>2</td>
</tr>
<tr>
<td>SOCI 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>
<tr>
<td>THEA 110</td>
<td>Introduction to Theatre</td>
<td>3</td>
</tr>
<tr>
<td>WRIT 121</td>
<td>Composition I</td>
<td>4</td>
</tr>
</tbody>
</table>

**TOTAL: 31 CREDITS**

### Limited Choice Requirements

(See Notes 1 and 2)

**TOTAL: 37-37.5 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)
  - Speech Communication Core Area (See Note 3)
  - Scientific/Technology Core Area
  - Global Perspectives and Diversity Core Area (See Note 3)
  - Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)

**Choice 2:**

- Career OR Transfer (Choose one subchoice)
  - 36-34.5 Credits
  - Subchoice 2A: Career Requirements
    - 34.5 Credits
    - Ballet Technique Classes (See Note 4)
    - 10
    - Modern Technique Classes (See Note 5)
    - 10
    - Related Professional Technique Classes (See Note 6)
    - 10
    - Repertoire/Performance Classes (See Notes 7 and 8)
    - 4.5
  - Subchoice 2B: Transfer Requirements
    - 34 Credits
    - Ballet Technique Classes (See Note 4)
    - 8
    - Modern Technique Classes (See Note 5)
    - 8
    - Related Professional Technique Classes (See Note 6)
    - 8
    - Repertoire/Performance Classes (See Notes 7 and 8)
    - 4
    - English Composition
    - 4
    - Social Science
    - 4
  - **MINIMUM TOTAL**
  - 68

**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 or Humanities to complete all general education requirements. See Transfer Information.
3. Students completing REQUIREMENTS have fulfilled the requirements for these Core areas.
4. Choose from DANC courses numbered 101, 111, 201, 211, or 244 (one choice must be 201 or 211.)
5. Choose from DANC courses numbered 102, 112, 202, or 212 (one choice must be 202 or 212.)
6. Choose from DANC courses numbered (104, 114 or 204) and (103, 113, 203, 132, 134, 203, or 204.)
7. Repertoire/Performance courses may be repeated for credit. Video Dance Repertoire may be repeated a maximum of two (2) times for credit.
8. Choose from DANC courses numbered 161 through 165.

### Suggested Course Sequence

Students should see course descriptions to find out how 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>DANC 125</td>
<td>HUMS 120</td>
<td>DANC 126</td>
<td>Lim. Ch. 1</td>
</tr>
<tr>
<td>DANC 193</td>
<td>MUSC 199</td>
<td>DANC 161</td>
<td>Lim. Ch. 2</td>
</tr>
<tr>
<td>THEA 110</td>
<td>SOCI 120</td>
<td>SPCH 120</td>
<td></td>
</tr>
<tr>
<td>WRIT 121</td>
<td>Lim. Ch. 2</td>
<td>Lim. Ch. 2</td>
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</tr>
</tbody>
</table>
MUSI C ASSOCIATE IN APPLIED ARTS DEGREE

Curriculum Code: 0270 (Effective Fall 2000-Summer 2005)

The Music Program enables students to transfer to a four-year institution after completing studies in music theory, piano and applied music. In addition to academic courses, the curriculum includes piano, voice, and small group performances with fine ensembles, and introduction to computers and music. Emphasis is placed on integrating skills acquisition with performing opportunities.

Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

This is a selective admission program. In order to be considered as a candidate for this program, students must meet basic admission requirements beyond those required for admission to the college.

PREREQUISITES

Students should see the Course Descriptions section of this catalog or the Course Schedule for course 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, students may need to complete specific course work in mathematics. For information on how to fulfill all general education requirements, see page 25.

INFORMATION

The admission requirements for this program may change each academic year. For the most recent application information, contact the Human Performance Department, Arts and Sciences Sciences Building, Room 225, telephone number (517) 483-1081 or the LCC Admissions Office, Room 2300, Gannon Vocational-Technical Center, telephone number (517) 483-1254.

REQUIREMENTS FOR ADMISSION TO THE MUSIC PROGRAM

Curriculum Code: 0721

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

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 PROGRAM REQUIREMENTS

Curriculum Code: 0270

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>CREDITS</th>
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<td>DUE-HOURS</td>
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<tr>
<td>ENGL 122</td>
<td>Writing: Literature and Ideas</td>
<td>4</td>
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<tr>
<td>MUSC 138</td>
<td>Class Piano Major I</td>
<td>2</td>
</tr>
<tr>
<td>MUSC 139</td>
<td>Class Piano Major II</td>
<td>2</td>
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<tr>
<td>MUSC 163</td>
<td>Aural Skills I</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 164</td>
<td>Aural Skills II</td>
<td>1</td>
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<tr>
<td>MUSC 193</td>
<td>Basic Musicianship I</td>
<td>3</td>
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<tr>
<td>MUSC 194</td>
<td>Basic Musicianship II</td>
<td>3</td>
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<tr>
<td>MUSC 240</td>
<td>World Music History I</td>
<td>4</td>
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<tr>
<td>MUSC 241</td>
<td>World Music History II</td>
<td>4</td>
</tr>
<tr>
<td>MUSC 263</td>
<td>Aural Skills III</td>
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<tr>
<td>MUSC 264</td>
<td>Aural Skills IV</td>
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<tr>
<td>MUSC 293</td>
<td>Advanced Musicianship I</td>
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<tr>
<td>MUSC 294</td>
<td>Advanced Musicianship II</td>
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<tr>
<td>MUSC 297</td>
<td>Synthesizers and Computer Music</td>
<td>2</td>
</tr>
<tr>
<td>POLS 120</td>
<td>Political System</td>
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<tr>
<td>SPCH 120</td>
<td>Dynamics of Communication</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 1)  TOTAL: 18-20 CREDITS

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

CHOICE 1: General Education Core Areas 6 Credits

(See the GENERAL EDUCATION section above)

<table>
<thead>
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<th>Core</th>
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<tbody>
<tr>
<td>Writing Core</td>
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<td>Speech</td>
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<td>Science</td>
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<td>Diversity</td>
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<td>Global</td>
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CHOICE 2: Private Lessons (See Note 3) 8 Credits

<table>
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<th>Course</th>
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<tbody>
<tr>
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<tr>
<td>MUSC 158</td>
<td>2</td>
</tr>
<tr>
<td>MUSC 257</td>
<td>2</td>
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<td>MUSC 258</td>
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CHOICE 3: Ensembles and Voice (Choose one subchoice) 4-6 Credits

Subchoice 3A: Voice Requirements (See Note 3)

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<thead>
<tr>
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<td>MUSC 180</td>
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Subchoice 3B: Instrumental Requirements (See Note 3)

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<th>Credits</th>
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<tr>
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</tr>
<tr>
<td>MUSC 123</td>
<td>1</td>
</tr>
</tbody>
</table>

MINIMUM TOTAL 63 CREDITS

- NOTES

1. It is strongly recommended that students intending to transfer to 4-year institutions should meet additional course requirements as outlined in the MACRAO Transfer Agreement (see Transfer Information). Students should also consult appropriate Curriculum Guides for transfer to specific 4-year programs (available from advisors.)

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

3. Course may be repeated and MUST be taken each semester student is enrolled as a major.

4. Course required only of Voice Majors, and must be taken in addition to the required vocal ensemble.

SUGGESTED COURSE SEQUENCE

Students should see course descriptions to find out when departments plan to offer courses. Students who for any reason are unable to follow the course sequence suggested below (for example, those who are part-time, have transferred 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>Course</th>
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<tr>
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<td>MUSC 138</td>
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<tr>
<td>MUSC 139</td>
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<td>WRIT 121</td>
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</table>

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**MUSIC: COMMERCIAL ASSOCIATE IN APPLIED ARTS DEGREE**

Curriculum Code: 0274 (Effective Fall 2000–Summer 2005)

The Music: Commercial Program has been designed to focus on today's music in pop and jazz idioms. It is a first step toward a professional career in commercial music, such as songwriter, music producer, or performer. In addition to academic music classes, the curriculum includes training in a private instrument, performances with fine ensembles, and introduction to computers and music.

Emphasis is placed on integrating skills acquisition with performance opportunities. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

This is a selective admission program. In order to be considered as a candidate for this program, students must meet basic admission requirements beyond those required for admission to the college.

**PREREQUISITES**

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

**GENERAL EDUCATION**

General education is an important part of this program and includes a mathematics competency requirement. To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics. For information on how to fulfill all general education requirements, see page 23.

**INFORMATION**

The admission requirements for this program may change each academic year. For the most recent application information, contact the Humanities and Performing Arts Department, Arts and Sciences Building, Room 255, telephone number (517) 483-1018 or the LCC Admissions Office, Room 232, Gannon Vocational-Technical Center, telephone number (517) 483-1254.

**REQUIREMENTS FOR ADMISSION TO THE MUSIC: COMMERCIAL PROGRAM**

Curriculum Code: 0722

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

a. Submit high school transcript or GED and all college transcripts.

b. Interview with Performing Arts advisor to discuss curriculum requirements. Required interviews for auditions pertaining to their specific instrument will be described in detail.

c. Audition: The actual audition day will consist of a live performance on an instrument or voice in front of a faculty panel. A theory test covering written and aural theory will also be administered on the audition day. Names of students passing this phase of the Selective Admissions will be forwarded to the Admissions Office for processing.

**MUSIC: COMMERCIAL PROGRAM REQUIREMENTS**

Curriculum Code: 0274

<table>
<thead>
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<tbody>
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<td>Audio Production I</td>
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</tr>
<tr>
<td>MTEC 121</td>
<td>Audio Recording I</td>
<td>4</td>
</tr>
<tr>
<td>MUSC 138</td>
<td>Class Piano Major I</td>
<td>2</td>
</tr>
<tr>
<td>MUSC 155</td>
<td>Class Voice Commercial I</td>
<td>2</td>
</tr>
<tr>
<td>MUSC 163</td>
<td>Aural Skills I</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 164</td>
<td>Aural Skills II</td>
<td>1</td>
</tr>
<tr>
<td>MUSC 193</td>
<td>Basic Musicianship I</td>
<td>3</td>
</tr>
<tr>
<td>MUSC 194</td>
<td>Basic Musicianship II</td>
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<td>Aural Skills III</td>
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<td>MUSC 293</td>
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<td>MUSC 297</td>
<td>Synthesizers &amp; Computer Music</td>
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**LIMIITED CHOICE REQUIREMENTS**

| TOTAL: 34 CREDITS | |

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<td>General Education Core Areas</td>
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<td>MUSC 253</td>
<td>Science/Technology Core Area</td>
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<td>Global Perspectives and Diversity Core Area</td>
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<tr>
<td>MUSC 255</td>
<td>Mathematics Competency</td>
<td>3</td>
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</table>

**CHOICE 1:**

- **General Education Core Areas**
  - 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
  - Mathematics Competency: 3 credits (See page 23 for information on how to fulfill this requirement. Course work may be needed.)

**CHOICE 2:**

- **History**
  - MUSC 240: World Music History I: 4 credits
  - MUSC 241: World Music History II: 4 credits
  - MUSC 242: American Musical Theater: 2 credits
  - MUSC 246: History of Blues and Jazz: 2 credits
  - MUSC 247: History of Rock and Roll: 2 credits

**CHOICE 3:**

- **Applied Skills**
  - MUSC 139: Class Piano Major II: 2 credits
  - MUSC 156: Class Voice Commercial II: 2 credits
  - MUSC 232: Music Seminar: 1 credit
  - MUSC 270: Rock Guitar I: 1 credit

**CHOICE 4:**

- **Private Lessons Commercial (See Note 1)**
  - MUSC 157: Applied Lesson I: 2 credits
  - MUSC 158: Applied Lesson II: 2 credits
  - MUSC 257: Applied Lesson III: 2 credits
  - MUSC 258: Applied Lesson IV: 2 credits

**CHOICE 5:**

- **Ensembles and Voice (Choose one subchoice)**
  - Subchoice SA: Voice Requirements (See Note 1)
    - MUSC 120: Concert Choir: 1 credit
  - Subchoice SB: Instrumental Requirements (See Note 1)
    - MUSC 119: Lansing Concert Band: 1 credit
    - MUSC 121: Percussion Ensemble: 1 credit
    - MUSC 123: Jazz Ensemble: 1 credit

**CHOICE 6:**

- **Media Technology (See Note 2)**
  - MTEC 122: Sound Reinforcement: 4 credits
  - MTEC 130: Radio Production I: 4 credits
  - MTEC 220: Audio Production II: 4 credits
  - MTEC 221: Audio Recording II: 4 credits

**CHOICE 7:**

- **Performing Arts Electives**
  - MUSC 276: Lyric Writing: 2 credits
  - MUSC 280: Private Songwriting: 1 credit
  - THEA 120: Introduction to Acting: 2 credits
  - DANC 201: Dance Classes (See Note 3): 1-2 credits

**MINIMUM TOTAL: 59**

**NOTES**

1. Courses may be repeated and must be taken each semester student is enrolled as a major.
2. Other Media Technology (MTEC) courses may be substituted with department approval.
3. Students may choose from 100 level DANC courses, and may need to meet other audition requirements.

**SUGGESTED COURSE SEQUENCE**

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

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

Curriculum Code: 0651 (Effective Fall 2000–Summer 2005)

The Music: Management Program has been designed to focus on today's music industry. It is a first step toward a business career in the music industry, such as, studio engineer, band manager, or music retailing. In addition to academic music classes, the curriculum includes training in a private instrument, performances with time ensembles, an introduction to computers and music, and business and management courses. Emphasis is placed on integrating musicianship and business skills. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

This is a selective admission program. In order to be considered as a candidate for this program, students must meet the basic admission requirements beyond those required for admission to the college.

PREREQUISITES

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

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. To fulfill the mathematics competency requirement, students may need to complete specific coursework in mathematics. For information on how to fulfill all general education requirements, see page 29.

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) 483-1016 or the LCC Admissions Office, Room 223, Gannon Vocational Technical Center, telephone number (517) 483-1254.

REQUIREMENTS FOR ADMISSION TO THE MUSIC: MANAGEMENT PROGRAM

Curriculum Code: 0652

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: MANAGEMENT PROGRAM REQUIREMENTS

Curriculum Code: 0651

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<td>MUSC 297</td>
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<td>WRIT 127</td>
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LIMITED CHOICE REQUIREMENTS

Total: 18–19 Credits

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

CHOICE 1:

- General Education Core Areas
  - Writing Core Area (See Note 1)
  - Speech Communication Core Area
  - Science/Technology Core Area
  - Global Perspectives and Diversity Core Area (See Note 1)
  - Mathematics Competency (See page 28 for information on how to fulfill this requirement. Course work may be needed.)

Credit Hours: 6–7

CHOICE 2:

- Private Lessons Commercial (See Note 2)
  - MUSC 157 | Applied Lesson I | 2 |
  - MUSC 158 | Applied Lesson II | 2 |
  - MUSC 257 | Applied Lesson III | 2 |
  - MUSC 258 | Applied Lesson IV | 2 |

Credit Hours: 3

CHOICE 3:

- Ensembles and Voice (Choose one subchoice)
  - MUSC 101 | Lansingers Vocal Ensemble | 1 |
  - MUSC 102 | Women's Chorus | 1 |
  - MUSC 103 | Men's Ensemble | 1 |
  - MUSC 108 | Concert Choir | 1 |

Credit Hours: 4

Subchoice 3A: Vocal Requirements (See Note 2)

- MUSC 119 | Lansing Concert Band | 1 |
- MUSC 121 | Percussion Ensemble | 1 |
- MUSC 123 | Jazz Ensemble | 1 |

Credit Hours: 1

MINIMUM TOTAL: 70

NOTES

1. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.
2. Courses may be repeated and must be taken each semester student is enrolled as a major for the credit total indicated for this CHOICE.

SUGGESTED COURSE SEQUENCE

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

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Students are responsible for completing all requirements as stated. The only official documentation of program completion status is an audit conducted by the Registrar's Office that is initiated when students apply for a degree or certificate. Students are expected to apply one semester prior to the semester they intend to graduate.
THEATRE
ASSOCIATE IN APPLIED ARTS DEGREE

Curriculum Code: 0278 (Effective Fall 2000—Summer 2005)

Theatre at LCC is designed to provide students as many opportunities to perform as possible and to focus students towards transfer to a four-year institution. A theatre major is part of a learning community; students take classes concurrently and work with the same group of students for two years. The theatre program concentrates on improvisation, Stanislavski method of script analysis and motivation, analysis of Shakespearean text, and individual and collaborative creativity. Graduation is dependent on successful participation in a minimum of four productions. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES

Students should see the Course Descriptions section of this catalog or the Course Schedule for course prerequisite information. Basic skills assessment and advising information may be found on page 3 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. To fulfill the mathematics competency requirement, students may need to complete specific coursework in mathematics. For information on how to fulfill all general education requirements, see page 23.

INFORMATION

Contact the Humanities and Performing Arts Department, Arts and Sciences Building, Room 255, telephone number (517) 483-1018.

REQUIREMENTS (See Note 1) TOTAL: 62 CREDITS

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<td>DANC 103</td>
<td>Jazz I</td>
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<td>ENGL 122</td>
<td>Writing: Literature and Ideas</td>
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<td>MUSC 182</td>
<td>Class Voice I</td>
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<td>POLS 120</td>
<td>American Political System</td>
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<td>SPCH 120</td>
<td>Dynamics of Communication</td>
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<tr>
<td>THEA 110</td>
<td>Introduction to Theatre</td>
<td>3</td>
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<tr>
<td>THEA 111</td>
<td>Basic Stagecraft</td>
<td>2</td>
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<tr>
<td>THEA 116</td>
<td>Scene Design I</td>
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<td>THEA 120</td>
<td>Introduction to Acting</td>
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<td>THEA 131</td>
<td>Studio Theatre Performance I</td>
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<td>THEA 132</td>
<td>Studio Theatre Performance II</td>
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<td>THEA 141</td>
<td>Acting I—Contemporary</td>
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<td>THEA 142</td>
<td>Acting II—Classics</td>
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<td>THEA 171</td>
<td>Dramatic Form and Function I</td>
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<td>THEA 172</td>
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<td>THEA 181</td>
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<td>THEA 220</td>
<td>Studio Theatre Performance III</td>
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<td>Studio Theatre Performance V</td>
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<td>WRIT 121</td>
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LIMITED CHOICE REQUIREMENTS (See Note 2) TOTAL: 8 CREDITS

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

**CHOICE 1:** General Education Core Areas 4 Credits

(See the GENERAL EDUCATION section above)

- Writing Core Area (See Note 3) 0
- Speech Communication Core Area (See Note 3) 0
- Science/Technology Core Area (See Note 4) 4
- Global Perspectives and Diversity Core Area (See Note 5) 0
- Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)

**CHOICE 2:** Humanities 4 Credits

- HUMS 211 History of Art I 4
- HUMS 212 History of Art II 4
- HUMS 213 World Civilizations I 4
- HUMS 214 World Civilizations II 4

MINIMUM TOTAL: 70

NOTES

1. Students must consult a Theatre Program advisor prior to declaring a theatre major. Most required theatre courses are offered in a sequenced studio format, and students must obtain program approval to enroll.
2. Those students who plan on attending a four-year school in Michigan should include an additional 4-credit course in: 1) Science or Mathematics and 2) Social Science or Humanities to complete all general education requirements.
3. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.
4. ASTR 201 or BIOL 210 is recommended.
5. Students completing Limited Choice Requirements have fulfilled the requirements for this Core area.

SUGGESTED COURSE SEQUENCE

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

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PHOTOGRAPHIC IMAGING
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 0277 (Effective Fall 2000–Summer 2005)

The field of photography is vast and diverse with a wide range of employment opportunities. Professionals include everyone from the traditional person with a camera, to a lab or service bureau employee, to someone working at a high-end computer station. Skill requirements fall into two categories, visual and technical. Visual skills include idea development, composition, lighting, and communication. Technical skills include practical and theoretical knowledge of cameras and other photographic-related equipment, light sensitive materials, processes, and digital-based imaging equipment and software. A 'photographer' may be self-employed, be a member of a small team, or be employed by a large company.

PREREQUISITES

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

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. To fulfill the mathematics competency requirement, students must take a specific course in mathematics. For information on how to fulfill all general education requirements, see page 23.

INFORMATION

Contact the Pictographic Imaging Technology Program, Photography Center, Room 117, telephone number (517) 483-1673.

### REQUIREMENTS

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<td>Computer Graphics/Photography</td>
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<td>IMGAG 111</td>
<td>Intro to Photographic Tech I</td>
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<td>IMGAG 112</td>
<td>Design for Imaging Tech</td>
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</tr>
<tr>
<td>IMGAG 113</td>
<td>Lighting Concepts/Applications</td>
<td>3</td>
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<td>IMGAG 114</td>
<td>Intro Photographic Color Tech</td>
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<td>IMGAG 117</td>
<td>Intro to Photographic Tech II</td>
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<tr>
<td>IMGAG 119</td>
<td>Intermediate Lighting</td>
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<td>Intermediate Color Ap and Tech</td>
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<td>IMGAG 234</td>
<td>Portfolio Assembly/Degree Comp (See Note 1)</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)

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- Writing Core Area: 3
- Speech Communication Core Area: 3
- Science/Technology Core Area (See Note 2): 3

Note: Global Perspectives and Diversity Core Area: 3

Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed)

#### CHOICE 2: Business

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- BUSN 118: Introduction to Business: 3
- IMGAG 233: The Business of Photography: 3

### MINIMUM TOTAL

60

### NOTES

1. 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.

2. For students completing all requirements for this program (including IMAG 114), the Science/Technology Core Area requirement is waived.

3. Students completing this curriculum have the option of doing so through a two-year, full-time sequence of courses or through part-time enrollment over a longer period. The full-time sequence begins most efficiently in the Fall Semester. Part-time students may begin their studies any semester.

4. For graduation, a student must have completed a minimum number of 20 credits in all courses taken to satisfy the course credits required in this curriculum.

### SUGGESTED COURSE SEQUENCE

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

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<td>IMAG 211</td>
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<td>IMAG 117</td>
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Students are responsible for completing all requirements as stated. The only official documentation of program completion status is an audit conducted by the Registrar's Office that is initiated when students apply for a degree or certificate. Students are expected to apply one semester prior to the semester they intend to graduate.
QUALITY ASSURANCE
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 026 (Effective Fall 2000-Summer 2005)

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 (ASQC) 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 Course Schedule for course prerequisite information. Basic skills assessment and advising information may be found on page 8 of this catalog.

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics. For information on how to fulfill all general education requirements, see page 23.

INFORMATION

Contact the Technology Careers Department, Gannon Vocational-Technical Center, Room 158, telephone number (517) 483-1336.

REQUIREMENTS

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>TOTAL: 47 CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CODE TITLE</td>
<td>CREDIT HOURS</td>
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<tr>
<td>QUAL 100 Intro Quality Assurance</td>
<td>4</td>
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<tr>
<td>QUAL 103 Probability/Stats Qual Asur</td>
<td>4</td>
</tr>
<tr>
<td>QUAL 104 Process Control Charting</td>
<td>3</td>
</tr>
<tr>
<td>QUAL 107 Problem-Solving Techniques</td>
<td>3</td>
</tr>
<tr>
<td>QUAL 115 Metrology</td>
<td>4</td>
</tr>
<tr>
<td>QUAL 200 Quality Improvement Teams</td>
<td>4</td>
</tr>
<tr>
<td>QUAL 203 Quality Systems Management</td>
<td>4</td>
</tr>
<tr>
<td>QUAL 205 Cost of Quality</td>
<td>3</td>
</tr>
<tr>
<td>QUAL 209 Reliability</td>
<td>3</td>
</tr>
<tr>
<td>QUAL 212 Applied Stats/Qual Asur</td>
<td>4</td>
</tr>
<tr>
<td>QUAL 215 Experimental Design in QA</td>
<td>4</td>
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<tr>
<td>QUAL 239 Qual Plan/Project Management</td>
<td>4</td>
</tr>
<tr>
<td>QUAL 242 Quality Auditing</td>
<td>3</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

(See the GENERAL EDUCATION section above)

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

Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)

CHOICE 2: Additional Quality Assurance/Technology Courses 9-12 Credits

<table>
<thead>
<tr>
<th>COURSE CODE</th>
<th>COURSE NAME</th>
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<td>CNCP 101</td>
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<td>3</td>
</tr>
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<td>DTDS 100</td>
<td>CAD/Drafting Concepts</td>
<td>4</td>
</tr>
<tr>
<td>DTDS 110</td>
<td>Industrial Blueprint Reading</td>
<td>3</td>
</tr>
<tr>
<td>MACH 100</td>
<td>Manufacturing Processes</td>
<td>4</td>
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<tr>
<td>QUAL 121</td>
<td>Intro Statistical Process Cont</td>
<td>3</td>
</tr>
<tr>
<td>QUAL 124</td>
<td>Quality Service/Supervisor Skills</td>
<td>3</td>
</tr>
<tr>
<td>QUAL 135</td>
<td>Measure/Sage Gage Tolerances</td>
<td>3</td>
</tr>
<tr>
<td>QUAL 224</td>
<td>Supervisory Skills for Quality</td>
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<tr>
<td>QUAL 251</td>
<td>Current Qual Asur Topics</td>
<td>1</td>
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<tr>
<td>QUAL 252</td>
<td>Current QA Topics II</td>
<td>2</td>
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</table>

MINIMUM TOTAL 58
QUALITY MANAGEMENT ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 0248 (Effective Fall 2000–Summer 2005)

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 (ASQ) as a Certified Quality Technician or Manager.

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

GENERAL EDUCATION
General education is an important part of this program and includes a mathematics competency requirement. To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics. For information on how to fulfill all general education requirements, see page 23.

INFORMATION
Contact the Technology Careers Department, Gannon Vocational-Techinal Center, Room 138, telephone number (517) 483-1336.

REQUIREMENTS

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<th>CODE</th>
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<td>Intro Quality Assurance</td>
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<td>QUAL 103</td>
<td>Probability/Stats Qual Assur</td>
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<td>QUAL 104</td>
<td>Process Control Charting</td>
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<td>QUAL 107</td>
<td>Problem-Solving Techniques</td>
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<td>QUAL 124</td>
<td>Quality Service/Customer Satis</td>
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<td>QUAL 200</td>
<td>Quality Improvement Teams</td>
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<tr>
<td>QUAL 203</td>
<td>Quality Systems Management</td>
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<tr>
<td>QUAL 205</td>
<td>Cost of Quality</td>
<td></td>
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<td>QUAL 212</td>
<td>Applied Stats/Qual Assur</td>
<td></td>
</tr>
<tr>
<td>QUAL 224</td>
<td>Supervisory Skills for Quality</td>
<td></td>
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<td>QUAL 242</td>
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LIMITED CHOICE REQUIREMENTS

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<td>Industrial Blueprint Reading</td>
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<td>QUAL 100</td>
<td>Intro Quality Assurance</td>
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<td>QUAL 103</td>
<td>Probability/Stats Qual Assur</td>
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<td>Process Control Charting</td>
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<td>Problem-Solving Techniques</td>
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<td>QUAL 124</td>
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<td>QUAL 203</td>
<td>Quality Systems Management</td>
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<td>QUAL 205</td>
<td>Cost of Quality</td>
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<td>QUAL 212</td>
<td>Applied Stats/Qual Assur</td>
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<td>QUAL 224</td>
<td>Supervisory Skills for Quality</td>
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<tr>
<td>QUAL 242</td>
<td>Quality Auditing</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>CODE</th>
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<td>Writing Core Area</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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<tr>
<td>Mathematics Competency (see page 23 for information on how to fulfill this requirement. Course work may be needed.)</td>
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CHOICE 2: Additional Related Courses

<table>
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<td>QUAL 121</td>
<td>Intro Statistical Process Cont</td>
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<td>QUAL 124</td>
<td>Quality Service/Customer Satis</td>
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<tr>
<td>QUAL 209</td>
<td>Reliability</td>
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<td>QUAL 224</td>
<td>Supervisory Skills for Quality</td>
<td></td>
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<tr>
<td>QUAL 239</td>
<td>Qual Plan/Project Management</td>
<td></td>
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<tr>
<td>QUAL 251</td>
<td>Current Qual Assur Topics</td>
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<tr>
<td>QUAL 252</td>
<td>Current QA Topics II</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 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.

QUALITY TECHNICIAN CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 0899 (Effective Fall 2000–Summer 2005)

The quality technician is a paraprofessional who supports quality engineers and the manufacturing production function. Tasks of the quality technician include measuring, testing, and other evaluations of production; preparing quality plans and instructions; analyzing measurement systems; maintaining a program of calibration and calibration of measurement devices; collecting and analyzing quality data; solving problems; and training inspectors and process operators. This program provides students with training and skills for an entry-level position in quality assurance with emphasis on technical areas of quality.

REQUIREMENTS

<table>
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<th>CODE</th>
<th>TITLE</th>
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<td>DTDTS 100</td>
<td>CAD/Drafting Concepts</td>
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<td>DTDTS 110</td>
<td>Industrial Blueprint Reading</td>
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<tr>
<td>QUAL 100</td>
<td>Intro Quality Assurance</td>
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</tr>
<tr>
<td>QUAL 103</td>
<td>Probability/Stats Qual Assur</td>
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<tr>
<td>QUAL 104</td>
<td>Process Control Charting</td>
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<td>QUAL 107</td>
<td>Problem-Solving Techniques</td>
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<tr>
<td>QUAL 124</td>
<td>Quality Service/Customer Satis</td>
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</tr>
<tr>
<td>QUAL 200</td>
<td>Quality Improvement Teams</td>
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<td>QUAL 203</td>
<td>Quality Systems Management</td>
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<td>QUAL 205</td>
<td>Cost of Quality</td>
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</tr>
<tr>
<td>QUAL 212</td>
<td>Applied Stats/Qual Assur</td>
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<td>QUAL 224</td>
<td>Supervisory Skills for Quality</td>
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<tr>
<td>QUAL 242</td>
<td>Quality Auditing</td>
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</table>

LIMITED CHOICE REQUIREMENTS

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

CHOICE 1: Related Technical Courses

<table>
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<th>CODE</th>
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<td>MACH 100</td>
<td>Manufacturing Processes</td>
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<td>MACH 135</td>
<td>Metalurgy and Heat Treat</td>
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</tr>
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<td>QUAL 204</td>
<td>Quality Improvement Teams</td>
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<td>QUAL 263</td>
<td>Quality Systems Management</td>
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<td>QUAL 205</td>
<td>Cost of Quality</td>
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<tr>
<td>QUAL 224</td>
<td>Supervisory Skills for Quality</td>
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<tr>
<td>QUAL 251</td>
<td>Current Qual Assur Topics</td>
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<tr>
<td>QUAL 252</td>
<td>Current QA Topics II</td>
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</table>

CHOICE 2: Mathematics (See Note 1)

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<th>CODE</th>
<th>TITLE</th>
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<tr>
<td>MATH 112</td>
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<tr>
<td>MATH 115</td>
<td>Technical Math II</td>
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</table>

MINIMUM TOTAL

35

NOTES

1. Students may waive the mathematics requirement by 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 309, Arts and Sciences Building.

2. Students should confer with a program advisor to assure that selection of Limited Choice courses will best fit their career plans.

SUGGESTED COURSE SEQUENCE

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

2000-2001 Catalog Lansing Community College

SUPERVISION, MANUFACTURING
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 0897 (Effective Fall 2000–Summer 2005)

A supervisor in the manufacturing industry is responsible to management and
works to direct and facilitate production workers. Required skills include a tech-
nical expertise of manufacturing processes and materials, planning and organ-
zational skills, interpersonal skills, an understanding of how organizations function,
special requirements of the organization such as ISO and QS-9000, and a knowl-
edge of systems to achieve a quality output. Many supervisors in manufacturing
start their career in an entry-level manufacturing position in which they have ac-
tained specific technical skills, then are promoted to a supervisory position and
have a need for supervisory skills development. This curriculum provides a foun-
dation of basic course work in supervision along with choices that allow the stu-
dent to customize their program of study to fit the industry in which they work.

Not all courses in this program transfer to all colleges. Students planning to
transfer should see an academic advisor or counselor before enrolling in any
course.

PREREQUISITES

Students should see the Course Descriptions section of this catalog or the Course
Schedule for course prerequisite information. Basic skills assessment and 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 require-
ment, students may need to complete specific course work in mathematics.
For information on how to fulfill all general education requirements, see page 23.

INFORMATION

Contact the Technology Careers Department, Darwen Vocational-Technical Cen-
ter, Room 196, telephone number (517) 483-1356.

REQUIREMENTS

CORE CREDIT HOURS

<table>
<thead>
<tr>
<th>Course</th>
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<th>Credits</th>
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<tr>
<td>BUSN 118</td>
<td>Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>EMTA 100</td>
<td>Medical First Responder</td>
<td>4</td>
</tr>
<tr>
<td>LABR 200</td>
<td>Intro to Labor Relations</td>
<td>3</td>
</tr>
<tr>
<td>MACH 100</td>
<td>Manufacturing Processes</td>
<td>4</td>
</tr>
<tr>
<td>QUAL 102</td>
<td>Intro Quality Assurance</td>
<td>4</td>
</tr>
<tr>
<td>QUAL 121</td>
<td>Intro Statistical Process Cont</td>
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</tr>
<tr>
<td>QUAL 224</td>
<td>Supervisory Skills for Quality</td>
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<tr>
<td>WRITE 124</td>
<td>Technical Writing</td>
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TOTAL: 46 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 (See Note 1) | 3
Speech Communication Core Area | 3
Science/Technology Core Area | 3
Global Perspectives and Diversity Core Area | 3
Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be waived.)

CHOICE 2: Related Technical Courses (See Note 2)

5-6 Credits

CNCP 101 PC Applications for Technology | 3
CNCP 120 Machine Controls and Setup | 4
COCP 210 Cooperative Education (Tech) | 4
DTDS 110 CAD/Drafting Concepts | 3
ELTE 100 Electrical Safety Practices | 1
ELTE 110 Practical Electricity | 3
MACH 105 Machine Tool Survey | 1
MACH 135 Metallurgy and Heat Treat | 4
MACH 140 Tooling Theory and Practices | 4

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

154 Lansing Community College Catalog 2000-2001
SUPervision, ManufAcTuRING
CeRtifyEATE OF AcHIEvEMEnt

Curriculum Code: 0898 (Effective Fall 2000–Summer 2005)

This program is designed for individuals seeking training for entry-level supervisory positions within the manufacturing industry. The courses required in this certificate program will also satisfy a portion of the Supervision, Manufacturing, associate degree program, allowing students to continue their education and training.

PREREQUISITES

Students should see the Course Descriptions section of this catalog or the Course Schedule for course prerequisite information. Basic skills assessment and advising information may be found on page 6 of this catalog.

INFORMATION

Contact the Technology Careers Department, Gannon Vocational-Technical Center, Room 136; telephone number (517) 483-1336.

REQUIREMENTS

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<th>CODE</th>
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<td>Medical First Responder</td>
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<td>QUAL 121</td>
<td>Intro Statistical Process Cont</td>
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<td>Quality Improvement Teams</td>
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<td>WRIT 124</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: Business and Technical Courses</th>
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<tr>
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<tr>
<td>CNCP 130 Machine Controls and Setup</td>
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</tr>
<tr>
<td>COOP 210 Coop Education (Tech)</td>
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</tr>
<tr>
<td>DTDS 100 CAD/Drafting Concepts</td>
<td>4</td>
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<tr>
<td>DTDS 110 Industrial Blueprint Reading</td>
<td>3</td>
</tr>
<tr>
<td>ELTE 100 Electrical Safety Practice</td>
<td>3</td>
</tr>
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<td>ELTE 110 Practical Electricity</td>
<td>3</td>
</tr>
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<td>MACH 105 Machine Tool Survey</td>
<td>3</td>
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<tr>
<td>MACH 155 Metallurgy and Heat Treat</td>
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<td>MACH 140 Tooling Theory and Practice</td>
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<td>MQMT 227 Training/Development for Burn</td>
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</table>

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 suggested below (for example, those who are part-time, have transferred in courses from another school, or have prerequisites or fulfill an academic advisor or counselor for help with adjustments.

<table>
<thead>
<tr>
<th>I</th>
<th>II</th>
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<td>MACH 100</td>
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<td>WRIT 124</td>
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REAL ESTATE

ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 0130 (Effective Fall 2000–Summer 2005)

Real estate agents rent, buy, and sell property for clients on a commission basis. Agents may study property listings to learn what is for sale, keep informed of property values, market conditions and mortgage options; find prospects, and develop leads and referrals; interview prospective clients to solicit listings; show property sites; draw up listings and contracts; negotiate loans on property; prepare marketing plans using advertising strategies such as open houses; and assist clients with available mortgage options.

PREREQUISITES

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

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics. For information on how to fulfill all general education requirements, see page 23.

INFORMATION

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

REQUIREMENTS  TOTAL: 39 CREDIT HOURS

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<tr>
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<tr>
<td>CISB 200</td>
<td>Info Sys Tech/Problem Solving</td>
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<td>MGMT 234</td>
<td>Diversity in the Workplace</td>
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<td>MKTG 119</td>
<td>Mktg/Manage Your Profess Image</td>
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<td>MKTG 120</td>
<td>Sales</td>
<td>3</td>
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<td>MKTG 200</td>
<td>Principles of Marketing</td>
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<td>REAL 273</td>
<td>Real Estate Investment</td>
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<td>REAL 274</td>
<td>Real Estate License Exam</td>
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<td>REAL 275</td>
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<td>Property Management</td>
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<td>REAL 279</td>
<td>Residential Appraisal</td>
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<td>SPCH 110</td>
<td>Oral Communication in the Workplace</td>
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<td>WRIT 127</td>
<td>Business Writing</td>
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LIMITED CHOICE REQUIREMENTS  TOTAL: 21–23 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) 0
Speech Communication Core Area (See Note 1) 0
Science/Technology Core Area (See Note 1) 0
Global Perspectives and Diversity Core Area (See Note 1) 0
Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)

CHOICE 2:  Accounting

ACCG 100 | Practical Accounting Non-Major | 3 |
ACCG 101 | Accounting Info for Management | 3 |
ACCG 210 | Principles of Accounting I | 4 |

CHOICE 3:  Real Estate Related (See Note 2)

ARCH 100 | Introduction to Architecture | 3 |
SLGT 100 | Introduction to Construction | 3 |
BUSN 118 | Introduction to Business | 3 |
BUSN 229 | Public Relations | 2 |
BUSN 295 | Small Business Management | 3 |
CIVL 120 | Surveying | 4 |
ECON 201 | Principles of Economics-Macro | 3 |
ECON 202 | Principles of Economics-Micro | 3 |
LEG 217 | Bus Law I, II, III Organiza | 3 |
LEG 221 | Real Estate Transaction | 3 |
MATH 117 | Math for Business | 4 |
MGMT 225 | Principles of Management | 3 |

MGMT 229 | Organizational Behavior | 3 |
MGMT 230 | Time and Stress Management | 3 |
MGMT 140 | Introduction to Advertising | 3 |
MGMT 210 | Marketing on the Internet | 2 |
REAL 271 | Introduction to Real Estate | 2 |

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

MINIMUM TOTAL 60

NOTES

1. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.
2. Students should confer with a Business Careers program advisor to assure that selection of Limited Choice courses will best fit their career plans.
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.

REAL ESTATE CERTIFICATE OF COMPLETION

Curriculum Code: 0148 (Effective Fall 2000–Summer 2005)

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

REQUIREMENTS  TOTAL: 15 CREDITS

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<td>REAL 276</td>
<td>Real Estate Financing</td>
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<td>REAL 279</td>
<td>Residential Appraisal</td>
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<tr>
<td>REAL 280</td>
<td>Real Estate Law</td>
<td>3</td>
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LIMITED CHOICE REQUIREMENTS  TOTAL: 5–6 CREDITS

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

CHOICE 1:  Real Estate Basics

MGKT 119 | Mktg/Manage Your Profess Image | 3 |
REAL 271 | Introduction to Real Estate | 2 |
REAL 274 | Real Estate License Exam | 3 |
REAL 277 | Property Management | 3 |

MINIMUM TOTAL 20

SUGGESTED COURSE SEQUENCE

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>REAL 273</td>
<td>Real Estate Investment</td>
<td>3</td>
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<tr>
<td>REAL 276</td>
<td>Real Estate Financing</td>
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<td>REAL 279</td>
<td>Residential Appraisal</td>
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<td>REAL 280</td>
<td>Real Estate Law</td>
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<tr>
<td>MKTG 120</td>
<td>Sales</td>
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<td>REAL 273</td>
<td>Real Estate Investment</td>
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<tr>
<td>REAL 276</td>
<td>Real Estate Financing</td>
<td>3</td>
</tr>
<tr>
<td>REAL 279</td>
<td>Residential Appraisal</td>
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<td>REAL 280</td>
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</table>

STUDENTS ARE RESPONSIBLE FOR COMPLETING ALL REQUIREMENTS AS STATED. THE ONLY OFFICIAL DOCUMENTATION OF PROGRAM COMPLETION STATUS IS AN ADJUDICATED BY THE REGISTRARS OFFICE THAT IS INITIATED WHEN STUDENTS APPLY FOR A DEGREE OR CERTIFICATE. STUDENTS ARE EXPECTED TO APPLY ONE SEMESTER PRIOR TO THE SEMESTER THEY INTEND TO GRADUATE.
**CHEMICAL PROCESS TECHNOLOGY**  
**ASSOCIATE IN APPLIED SCIENCE DEGREE**

Curriculum Code: 0859 (Effective Fall 2000–Summer 2005)

Chemical Process Technologists are trained for employment as process operators in the chemical and related industries. Process operators are required to maintain safety, health and environmental standards in the plant; handle, store, and transport chemical processes; operate, monitor, and control continuous and batch processes; and participate in routine and preventative maintenance of equipment and instrumentation.

Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

**PREREQUISITES**

Students should see the Course Descriptions section of this catalog or the Course Schedule for course prerequisite information. Basic skills assessment and advising information may be found on page 5 of this catalog.

**GENERAL EDUCATION**

General education is an important part of this program and includes a mathematics competency requirement. To fulfill the mathematics competency requirement, students may need to complete specific coursework in mathematics. For information on how to fulfill all general education requirements, see page 23.

**INFORMATION**

Contact the Science Department, Arts and Sciences Building, Room 406, telephone number (517) 483-1062.

**REQUIREMENTS**

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<td>CHEM 182</td>
<td>Introductory Organic Chemistry</td>
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<td>CHEM 192</td>
<td>Intro Organic Chemistry Lab</td>
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<td>ENVR 131</td>
<td>Industrial Process &amp; Polut. Prevention</td>
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<td>FIRE 220</td>
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<td>4</td>
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<tr>
<td>MFGM 101</td>
<td>Industrial Hydraulics</td>
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<tr>
<td>PHYS 200</td>
<td>Applied Physics</td>
<td>4</td>
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<td>RDCM 128</td>
<td>Introduction to Sociology</td>
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<td>SPCH 110</td>
<td>Oral Communication in the Workplace</td>
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<tr>
<td>WRT 102</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  
(See the GENERAL EDUCATION section above)

- 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 (See Note 1)  
- Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)

**CHOICE 2:** Mathematics (Choose one subchoice)  
7–8 Credits

**Subchoice 2A:**
- MATH 112 Intermediate Algebra  
- QUL 103 Probability/Stats Qual Assur  

**Subchoice 2B:**
- MATH 122 College Algebra I  
- STAT 170 Introduction to Statistics  

**CHOICE 3:** Computer Science  
3 Credits

**Subchoice 3:**
- CNCP 101 PC Applications for Technology  
- CPSC 120 Introduction to Computers  

**ELECTIVES**

Students must take at least 10 credits of electives. The following are recommended:

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<tbody>
<tr>
<td>ENV 121</td>
<td>Environmental Rules &amp; Regs</td>
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<td>ENV 122</td>
<td>Enviro Sampl &amp; Instrumentation</td>
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<td>ELTE 102</td>
<td>Electrical Safety Practices</td>
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<td>ELTE 110</td>
<td>Practical Electricity</td>
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<td>MACH 135</td>
<td>Metallurgy and Heat Treat</td>
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<td>MFGM 102</td>
<td>Industrial Pneumatics</td>
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<tr>
<td>SCIN 267</td>
<td>Internship in Science Technol</td>
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</tr>
<tr>
<td>CHEM 282</td>
<td>Quantitative Analysis</td>
<td>3</td>
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**TOTAL: 13 CREDITS**

**MINIMUM TOTAL:** 51

**NOTE**

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

**SUGGESTED COURSE SEQUENCE**

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

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<tr>
<th>COURSE</th>
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<td>CHEM 151</td>
<td>CHEM 152</td>
<td>ENVR 131</td>
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<td>CHEM 161</td>
<td>CHEM 162</td>
<td>MFGM 101</td>
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<td>Lim. Ch. 3</td>
<td>SPCH 110</td>
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**TOTAL: 10–11 CREDITS**

Students are responsible for completing all requirements as stated. The only official documentation of program completion status is an audit conducted by the Registrar's Office that is initiated when students apply for a degree or certificate. Students are expected to apply one semester prior to the semester they intend to graduate.
CHEMICAL PROCESS TECHNOLOGY
CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 0660 (Effective Fall 2000–Summer 2005)

This program will qualify students for immediate employment in the chemical or chemical-related industries as chemical process technicians. In this capacity, employees are involved in the direct manufacture of products - monitoring, calibrating and maintaining equipment used in the production process. Additionally, they would practice quality assurance standards, environmental regulations, and safety procedures. Students may also elect to apply their certificate credits toward a two-year associates degree in this area.

PREREQUISITES
Students should see the Course Descriptions section of this catalog or the Course Schedule for course prerequisite information. Basic skills assessment and advising information may be found on page 6 of this catalog.

INFORMATION
Contact the Science Department, Arts and Sciences Building, Room 408, telephone number (517) 483-1092.

REQUIREMENTS
TOTAL: 23 CREDITS

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<td>CHEM 182</td>
<td>Introductory Organic Chemistry</td>
<td>3</td>
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<tr>
<td>CHEM 192</td>
<td>Intro Organic Chemistry Lab</td>
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</tr>
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<td>PHYS 200</td>
<td>Applied Physics</td>
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<tr>
<td>QUAL 100</td>
<td>Intro Quality Assurance</td>
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<td>SPCH 110</td>
<td>Oral Communicate in the Workplace</td>
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<td>WRIT 124</td>
<td>Technical Writing</td>
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LIMITED CHOICE REQUIREMENTS
TOTAL: 10–11 CREDITS

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

CHOICE 1: Computer Science 3 Credits
- CNCP 101: PC Applications for Technology 3
- CPSC 120: Introduction to Computers 3

CHOICE 2: Mathematics (Choose one subchoice) 7–8 Credits
- Subchoice 2A:
  - MATH 112: Intermediate Algebra 4
  - QUAL 103: Probability/Stats Qual Assur 4
- Subchoice 2B:
  - MATH 121: College Algebra I 4
  - STAT 170: Introduction to Statistics 3

MINIMUM TOTAL 33–34 CREDITS

NOTE
1. A minimum grade of 2.0 is required in MATH 112, PHYS 200, and in either CHEM 125 or CHEM 192.

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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CHEMICAL TECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 0153 (Effective Fall 2000-Summer 2005)

Graduates with associate degrees in Chemical Technology are in demand by the chemical industry. This program prepares students to work with chemists and chemical engineers in many settings. Research, development, and production of pharmaceuticals, agricultural chemicals, and plastics as well as related functions such as sales and technical writing are some of the opportunities that are available to persons with this type of training. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

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

GENERAL EDUCATION
General education is an important part of this program and includes a mathematics competency requirement. To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics. For information on how to fulfill all general education requirements, see page 23.

INFORMATION
Contact the Science Department, Arts and Sciences Building, Room 408, telephone number (617) 483-1092.

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<td>CHEM 162</td>
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<td>Organic Chemistry Lecture I</td>
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<tr>
<td>CHEM 252</td>
<td>Organic Chemistry Lecture II</td>
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<td>Quantitative Analysis</td>
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<td>CHEM 272</td>
<td>Organic Chemistry Laboratory</td>
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<td>Introduction to Computers</td>
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<td>College Algebra and Trig</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>
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<td>STAT 170</td>
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<td>Composition I</td>
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<td>WRIT 122</td>
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LIMITED CHOICE REQUIREMENTS
TOTAL: 10-12 CREDITS

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

CHOICE 1: General Education Core Areas (See Note 1) 0 Credits
(See the GENERAL EDUCATION section above)

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

CHOICE 2: Science Electives 10-12 Credits

- BIOL 127 Cell Biology
- ENVR 121 Environmental Rules and Regs
- ENVR 122 Enviro Sample & Instrumentation
- ENVR 131 Industrial Process & Pollut Preven
- MICS 203 Microbiology
- PHYS 202 Introductory Physics II
- PHYS 225 Physics I Laboratory
- PHYS 226 Physics II Laboratory
- SCIN 287 Internship in Science Technolo

MINIMUM TOTAL 65

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

Students are responsible for completing all requirements as stated. The only official documentation of program completion status is an audit conducted by the Registrar's Office that is initiated when students apply for a degree or certificate. Students are expected to apply one semester prior to the semester they intend to graduate.
ENVIRONMENTAL TECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 0792 (Effective Fall 2000–Summer 2005)

Environmental Technicians may work for environmental/engineering consulting firms, local or state regulatory agencies, manufacturers, recycling and waste management companies and local utility and public service (works) departments. They perform tasks such as environmental sample collection and monitoring, instrument calibration, report writing and data management. Environmental Technicians may help clients comply with governmental environmental standards, assist in field investigations, work as a team member on a waste or contamination site. They use computer skills to work with environmental data as well as the concepts of chemistry, biology, meteorology, geology and hydrology to help professionals determine the movement and effects of environmental contaminants.

Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor before enrolling in any course.

PREREQUISITES

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

GENERAL EDUCATION

General education is an important part of this program and includes a mathematic competency requirement. To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics. For information on how to fulfill all general education requirements, see page 23.

INFORMATION

Contact the Science Department, Arts and Sciences Building, Room 408, telephone number (517) 483-1092.

REQUIREMENTS

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<td>CHEM 161</td>
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<td>CHEM 182</td>
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<td>MATH 121</td>
<td>College Algebra I</td>
<td>4</td>
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<tr>
<td>SPCH 120</td>
<td>Dynamics of Communication</td>
<td>3</td>
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<tr>
<td>STAT 170</td>
<td>Introduction to Statistics</td>
<td>3</td>
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<tr>
<td>WRIT 121</td>
<td>Composition I</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

(See the GENERAL EDUCATION section above)

- Writing Core Area (See Note 1) 0
- Speech Communication Core Area (See Note 1) 0
- Science/Technology Core Area (See Note 1) 0
- Global Perspectives and Diversity Core Area (See Note 2) 3-4
- Mathematics Competency (See Note 1) 0

CHOICE 2: Environmentally Related Courses

- CIVL 135 Solis Technology 3
- GEOL 230 Environmental Geology 4
- GRET 220 Beginning Micro/Station 3
- GRET 220 Hydrological Systems 3
- GRET 255 Beginning ARCINFO 3
- POLS 120 American Political System 4
- SOCN 287 Internship in Science Technology 4

MINIMUM TOTAL 65

NOTES

1. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.
2. Students who plan to transfer to a 4 year institution should choose a 4 credit course in order to help meet the MACRAO requirements.

SUGGESTED COURSE SEQUENCE

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

<table>
<thead>
<tr>
<th>I</th>
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<tr>
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<td>CHEM 102</td>
<td>ENVR 122</td>
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<td>FIRE 220</td>
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<td>WRIT 121</td>
<td>Lim. Ch. 2</td>
<td>Lim. Ch. 2</td>
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</tbody>
</table>

Students are responsible for completing all requirements as stated. The only official documentation of program completion status is an audit conducted by the Registrar's Office that is initiated when students apply for a degree or certificate. Students are expected to apply one semester prior to the semester they intend to graduate.
HISTOLOGIC TECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 0923 (Effective Fall 2000–Summer 2002)

Histologic Technicians work under the supervision of a pathologist to prepare tissue specimens for diagnosis. They perform gross tissue preparation and laboratory procedures to show microscopic structure. Histologic Technicians solve problems, demonstrate ethics and patient confidentiality, and use chemical safety and universal precautions. Histologic Technicians work together with laboratory personnel to provide doctors with information for making a diagnosis. Histologic Technicians must be certified by the American Society of Clinical Pathologists (ASCP). This curriculum is intended for students who have been admitted to the joint LCC/Capital Area Career Center Histologic Technology Program.

This is a selective admission program. In order to be considered as a candidate for this program, students must meet basic admission requirements beyond those required for admission to the College. Many of the courses for this program are open only to students officially admitted to the Histologic Technology Program.

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

GENERAL EDUCATION

General education is an important part of this program and includes a mathematics competency requirement. To fulfill the mathematics competency requirement, students may need to complete specific coursework in mathematics. For information on how to fulfill all general education requirements, see page 23.

INFORMATION

Contact the Science Department, Arts and Sciences Building, Room 408, telephone number (517) 483-1092 or The Capital Area Career Center at (517) 244-1303.

REQUIREMENTS FOR ADMISSION TO THE HISTOLOGIC TECHNOLOGY PROGRAM

For current information about admission requirements, students must contact the Science Department, Arts and Sciences Building, Room 408, telephone number (517) 483-1092 or the LCC Admissions Office, Room 2000, Garrison Vocational Technical Center, telephone number (517) 483-1254.

REQUIREMENTS

<table>
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<td>BIOL 127</td>
<td>Cell Biology</td>
<td>4</td>
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<td>CHEM 151</td>
<td>General Chemistry Lecture I</td>
<td>4</td>
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<td>CHEM 161</td>
<td>General Chemistry Lab I</td>
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<td>CPSC 120</td>
<td>Introduction to Computers</td>
<td>3</td>
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<tr>
<td>MATH 112</td>
<td>Intermediate Algebra</td>
<td>4</td>
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<tr>
<td>SCIS 297</td>
<td>Independent Study in Science</td>
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<tr>
<td>SOCL 120</td>
<td>Introduction to Sociology</td>
<td>4</td>
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<tr>
<td>SPCH 120</td>
<td>Dynamics of Communication</td>
<td>3</td>
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<tr>
<td>WRIT 121</td>
<td>Composition I</td>
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</tbody>
</table>

Completion of the accredited Capital Area Career Center Histologic Technology Program Certification by the ASCP (see Note 1) 16 Credits

LIMITED CHOICE REQUIREMENTS

Total: 11 Credits

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

CHOICE 1: General Education Core Areas (see Note 2) 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
- Mathematics Competency

CHOICE 2: Electives 11 Credits

- MATH 121 | College Algebra I | 4 |
- MICR 203 | Microbiology | 3 |
- MICR 204 | Microbiology Laboratory | 1 |
- PHGY 202 | Human Physiology | 4 |
- SCIN 237 | Internship in Science Technology | 4 |
- STAT 170 | Introduction to Statistics | 3 |
- WRIT 122 | Composition II | 4 |

MINIMUM TOTAL 62

NOTES

1. The specific histologic technique courses necessary to prepare for this certification must be taken at the Capital Area Career Center or, students who have prepared for the certification exam in another program may apply for "Credit for Previously Acquired Knowledge and Learning Experience." See the Student Records section of this catalog.

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>
<tr>
<th>I</th>
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<tr>
<td>SCIS 297</td>
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<td>ANAT 201</td>
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<tr>
<td>MATH 112</td>
<td>CHEM 151</td>
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<tr>
<td>WRIT 121</td>
<td>CPSC 120</td>
<td>SOCL 120</td>
<td></td>
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</table>

STUDENTS ARE RESPONSIBLE FOR COMPLETING ALL REQUIREMENTS AS STATED. THE ONLY OFFICIAL REGISTRATION OF PROGRAM COMPLETION STATUS IS AN AUDIT CONDUCTED BY THE REGISTRARS OFFICE THAT IS INITIATED WHEN STUDENTS APPLY FOR A DEGREE OR CERTIFICATE. STUDENTS ARE EXPECTED TO APPLY ONE SEMESTER PRIOR TO THE SEMESTER THEY INTEND TO GRADUATE.
**MOLECULAR BIOTECHNOLOGY ASSOCIATE IN APPLIED SCIENCE DEGREE**

Curriculum Code: 0212 (Effective Fall 2000--Summer 2005)

The Biotechnology program is a laboratory-intensive curriculum which emphasizes the wide-ranging applications of recombinant DNA technology (genetic engineering) including the preparation of gene libraries, Polymerase Chain Reaction, and DNA "fingerprinting." Graduates of this program will be able to work in many exciting areas of biotechnology, such as human genetic disease research, improvement of disease-resistance in plants, enhanced crop production, pharmaceutical research, biological cleanup of environmental pollution, or genome sequencing projects. Near the end of the program the Science Department will make every effort to arrange internships in industry or industrial research laboratories for students who wish to gain further experience. If you plan to transfer to a four-year school, please see an academic advisor or counselor before enrolling. Visit the biotechnology website for further program details: www.lansing.cc.mi.us/science/molecbio

**PREREQUISITES**

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

**GENERAL EDUCATION**

General education is an important part of this program and includes a mathematics competency requirement. To fulfill the mathematics competency requirement, students may need to complete specific coursework in mathematics. For information on how to fulfill all general education requirements, see page 23.

**INFORMATION**

Contact the Science Department, Arts and Sciences Building, Room 408, telephone number (517) 483-1092.

<table>
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<tr>
<td>BIOL 275</td>
<td>Molecular Biology I (See Note 3)</td>
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<td>BIOL 276</td>
<td>Molecular Biology II</td>
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<tr>
<td>CHEM 151</td>
<td>General Chemistry Lecture I</td>
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<tr>
<td>CHEM 152</td>
<td>General Chemistry Lecture II</td>
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<td>CHEM 161</td>
<td>General Chemistry Lab I</td>
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<td>CHEM 162</td>
<td>General Chemistry Lab II</td>
</tr>
<tr>
<td>CHEM 251</td>
<td>Organic Chemistry Lecture I</td>
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<tr>
<td>CHEM 252</td>
<td>Organic Chemistry Lecture II</td>
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<td>CHEM 272</td>
<td>Organic Chemistry Laboratory</td>
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<td>Microbiology Laboratory</td>
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<td>Introduction to Sociology</td>
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<td>SPCH 120</td>
<td>Dynamics of Communication</td>
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<tr>
<td>WRIT 121</td>
<td>Composition I</td>
</tr>
<tr>
<td>WRIT 122</td>
<td>Composition II</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)

- Writing Core Area (See Note 1) | 0 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 (See Note 1) | 0 Credits
- Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be remediated.) | 0 Credits

**CHOICE 2:** Humanities (See Note 2) | 8 Credits

**CHOICE 3:** Social Science (See Note 2) | 4 Credits

**CHOICE 4:** Mathematics | 4–5 Credits

- MATH 121 College Algebra I | 4 Credits
- MATH 128 College Algebra and Trig | 5 Credits

**MINIMUM TOTAL:** 70 Credits

**NOTES:**

1. Students completing **REQUIREMENTS** have fulfilled the requirements for this Core area.
2. See the **NACAC Transfer Agreement** in the "Transfer Information" section of this catalog for appropriate Humanities and Social Science courses.
3. Students are strongly urged to complete BIOL 127 and CHEM 161 before enrolling in BIOL 275.

**SUGGESTED COURSE SEQUENCE**

Students should consult 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>BIOL 127</td>
<td>CHEM 152</td>
<td>BIOL 275</td>
<td>BIOL 278</td>
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<td>CHEM 161</td>
<td>CHEM 261</td>
<td>CHEM 262</td>
<td>CHEM 272</td>
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<td>WRIT 121</td>
<td>MIRC 204</td>
<td>SOC 120</td>
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<td>Lim. Ch. 3</td>
<td>WRIT 122</td>
<td>Lim. Ch. 5</td>
<td>Lim. Ch. 2</td>
</tr>
</tbody>
</table>

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VETERINARY TECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE DEGREE

Curriculum Code: 0287 (Effective Fall 2000-Summer 2001)

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, biomed research institutions, zoological parks, and other animal care facilities. This curriculum is intended for students who have been admitted to the part LCC/MSU Veterinary Technology Program. Admission is by application only.

PREREQUISITES

Students should see the Course Descriptions section of this catalog or the Course Schedule for course prerequisite information. Basic skills assessment and advising information may be found on page 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, students may need to complete specific course work in mathematics. For information on how to fulfill all general education requirements, see page 23.

INFORMATION

Contact the Science Department, Arts and Sciences Building, Room 408, telephone number (517) 483-1692 or the MSU Department of Veterinary Technology at (517) 433-7267.

<table>
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<td>CHEM 161</td>
<td>General Chemistry Lab I</td>
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<tr>
<td>MICR 203</td>
<td>Microbiology</td>
</tr>
<tr>
<td>MICR 204</td>
<td>Microbiology Laboratory</td>
</tr>
<tr>
<td>SPCH 120</td>
<td>Dynamics of Communication</td>
</tr>
<tr>
<td>WRIT 121</td>
<td>Composition I</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 Credits |
| Writing Core Area (See Note 1) | 0 |
| Speech Communication Core Area (See Note 1) | 0 |
| Science/Technology Core Area (See Note 1) | 0 |
| Global Perspectives and Diversity Core Area | 3 |
| Mathematics Competency (See Note 3) | |

<table>
<thead>
<tr>
<th>CHOICE 2: Math Requirement</th>
</tr>
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<tbody>
<tr>
<td>MATH 121</td>
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<tr>
<td>MATH 126</td>
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<table>
<thead>
<tr>
<th>CHOICE 3: MSU Veterinary Medicine Courses</th>
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</thead>
<tbody>
<tr>
<td>Required Veterinary Medicine courses taken at Michigan State University (See Note 2)</td>
</tr>
</tbody>
</table>

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 the requirement are: VM 200, VM 201, VM 300, VM 301, VM 302, VM 303, VM 304. These courses must be taken at Michigan State University.
3. Students completing Limited Choice 2 have fulfilled the requirements for this Core area.

SUGGESTED COURSE SEQUENCE

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

<table>
<thead>
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<td>MICR 203</td>
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<td>CHEM 161</td>
<td>MICR 294</td>
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<td>SPCH 120</td>
<td>Lim. Ch. 1</td>
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<td>WRIT 121</td>
<td>Lim. Ch. 2</td>
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</table>

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SIGN LANGUAGE

2000-2001 Catalog Lansing Community College www.lcc.edu

SIGN LANGUAGE INTERPRETER
ASSOCIATE IN APPLIED ARTS DEGREE

Curriculum Code: 0262 (Effective Fall 2000-Summer 2005)

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 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 of deafness in the Department of Labor for the State of Michigan. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

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

GENERAL EDUCATION
General education is an important part of this program and includes a mathematics competency requirement. To fulfill the mathematics competency requirement, students must complete specific course work in mathematics. For information on how to fulfill all general education requirements, see page 23.

INFORMATION
Contact the Human, Health and Public Service Careers Department, 2000-2001 Catalog Lansing Community College, 175, telephone number (517) 485-1410.

REQUIREMENTS

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<td>SIGN 161</td>
<td>American Sign Language I 3</td>
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<tr>
<td>SIGN 162</td>
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<td>SIGN 163</td>
<td>American Sign Language III 3</td>
</tr>
<tr>
<td>SIGN 164</td>
<td>American Sign Language IV 3</td>
</tr>
<tr>
<td>SIGN 166</td>
<td>Fingerspelling 2</td>
</tr>
<tr>
<td>SIGN 167</td>
<td>Beginning Sign to Voice 3</td>
</tr>
<tr>
<td>SIGN 168</td>
<td>Expressive Manual Commun 2</td>
</tr>
<tr>
<td>SIGN 170</td>
<td>Creative Arts Sign 2</td>
</tr>
<tr>
<td>SIGN 176</td>
<td>Advanced Fingerspelling 3</td>
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<tr>
<td>SIGN 250</td>
<td>Deaf Culture and History 3</td>
</tr>
<tr>
<td>SIGN 259</td>
<td>Linguistic Principles of ASL 3</td>
</tr>
<tr>
<td>SIGN 261</td>
<td>Principles of Interpreting (See Note 1) 3</td>
</tr>
<tr>
<td>SIGN 262</td>
<td>Mock Quality Assurance (OA) 3</td>
</tr>
<tr>
<td>SIGN 263</td>
<td>Intermediate Sign to Voice 3</td>
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<td>SIGN 264</td>
<td>Advanced Sign to Voice 3</td>
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<td>SIGN 265</td>
<td>Adv Interpreting/Translational 3</td>
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<td>SIGN 269</td>
<td>Independent Study/Sign Language 1</td>
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LIMITED CHOICE REQUIREMENTS

| TOTAL: 12 CREDITS |

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

CHOICE 1: General Education Core Areas (See Note 2) 12 Credits
(See the GENERAL EDUCATION section above)

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

MINIMUM TOTAL 65

NOTES
1. An interpreter screening is required after the successful completion of SIGN 163 and SIGN 167 and prior to registering for SIGN 261.
2. Students completing REQUIREMENTS have fulfilled the requirements for these Core areas.

SUGGESTED COURSE SEQUENCE

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

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SIGN LANGUAGE INTERPRETER CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 0187 (Effective Fall 2000-Summer 2005)

A Sign Language Interpreter is a person specially trained to facilitate communication between the deaf and hard of hearing communities. State certification for interpreters is required by taking the Quality Assurance Examination as issued through the Division of deafness in the State of Michigan.

REQUIREMENTS

<table>
<thead>
<tr>
<th>CODE</th>
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<tr>
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<td>Orientation to deafness 2</td>
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<tr>
<td>SIGN 161</td>
<td>American Sign Language I 3</td>
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<td>SIGN 162</td>
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<tr>
<td>SIGN 164</td>
<td>American Sign Language IV 3</td>
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<tr>
<td>SIGN 166</td>
<td>Fingerspelling 2</td>
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<td>SIGN 167</td>
<td>Beginning Sign to Voice 3</td>
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<td>SIGN 251</td>
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<td>Intermediate Sign to Voice 3</td>
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<tr>
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<td>Sign Internship II 3</td>
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<td>SIGN 269</td>
<td>Independent Study/Sign Language 1</td>
</tr>
</tbody>
</table>

LIMITED CHOICE REQUIREMENTS

| TOTAL: 2-3 CREDITS |

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

CHOICE 1: Related Professional Courses 2-3 Credits

SIGN 169 | Expressive Manual Commun 2 |
SIGN 170 | Creative Arts Sign 2 |
SIGN 176 | Advanced Fingerspelling 2 |
SIGN 259 | Deaf Culture and History 3 |
SIGN 262 | Linguistic Principles of ASL 3 |
SIGN 264 | Advanced Sign to Voice 3 |
SIGN 265 | Adv Interpreting/Translational 3 |

MINIMUM TOTAL 36

NOTE
1. Students who have completed SIGN 160 and SIGN 161 and prior to registering for SIGN 251.

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>
<th>SIGN 160</th>
<th>SIGN 162</th>
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<th>SIGN 164</th>
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<td>SIGN 161</td>
<td>SIGN 166</td>
<td>SIGN 167</td>
<td>SIGN 168</td>
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<td>Lim.Ch.1</td>
<td>Lim.Ch.1</td>
<td>SIGN 170</td>
<td>SIGN 176</td>
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<td>Lim.Ch.1</td>
<td>Lim.Ch.1</td>
<td>SIGN 170</td>
<td>SIGN 176</td>
</tr>
</tbody>
</table>

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

Curriculum Code: 0853 (Effective Fall 2000-Summer 2005)

The Stage Technology Program provides training in technical skills associated with the stage technology industry, as well as general education classes that are part of most liberal studies degrees. Students who eventually plan to study scenic design or lighting design; media technology or communications, including television and film studies; electrical or mechanical engineering; or other related fields may find the unique blend of theory and practice in the Stage Technology Program particularly helpful. Upon completion of this degree, students may choose to enter the stage technology field; or, with appropriate course planning, a student may transfer to a four-year institution. Not all courses in this program transfer to all colleges. Students planning to transfer should see an academic advisor or counselor before enrolling in any course.

PREREQUISITES

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

GENERAL EDUCATION

General Education is an important part of this program and includes a mathematics competency requirement. To fulfill the mathematics competency requirement, some students may find it necessary to complete specific course work in mathematics. For information on how to fulfill all general education requirements, see page 23.

INFORMATION

Contact the Technology Careers Department, Gannon Vocational-Technical Center, Room 136, telephone number (517) 489-1326.

REQUIREMENTS

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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<tr>
<td>ISCI 131</td>
<td>Integrated Science - Physical</td>
<td>4</td>
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<tr>
<td>MFGM 125</td>
<td>Rigging</td>
<td>2</td>
</tr>
<tr>
<td>MTEC 120</td>
<td>Audio Production I</td>
<td>2</td>
</tr>
<tr>
<td>SOCL 120</td>
<td>Introduction to Sociology</td>
<td>4</td>
</tr>
<tr>
<td>SPCH 110</td>
<td>Oral Communication in the Workplace</td>
<td>3</td>
</tr>
<tr>
<td>STEC 100</td>
<td>Intro to Stage Tech Industry</td>
<td>2</td>
</tr>
<tr>
<td>STEC 120</td>
<td>Stage Lighting and Electricity</td>
<td>3</td>
</tr>
<tr>
<td>STEC 130</td>
<td>Audio/Visual Technology</td>
<td>3</td>
</tr>
<tr>
<td>STEC 140</td>
<td>Theatrical Make-Up/Wardrobe</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>Basic Stagecraft</td>
<td>2</td>
</tr>
<tr>
<td>THEA 116</td>
<td>Scene Design I</td>
<td>3</td>
</tr>
<tr>
<td>THEA 210</td>
<td>Theatre History</td>
<td>4</td>
</tr>
<tr>
<td>WRT 121</td>
<td>Composition I</td>
<td>4</td>
</tr>
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</table>

LIMITED CHOICE REQUIREMENTS

| TOTAL: 26 CREDITS |

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

| CHOICE 1: General Education Core Areas | 0 Credits |
| See the GENERAL EDUCATION section above |
| Writing Core Area (See Note 1) | 0 |
| Speech Communication Core Area (See Note 1) | 0 |
| Science/Technology Core Area (See Note 1) | 0 |
| Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be necessary.) | 0 |

| CHOICE 2: Humanities | 8 Credits |
| CUNY 211 | History of Art I | 4 |
| CUNY 212 | History of Art II | 4 |
| CUNY 213 | World Civilizations I | 4 |
| CUNY 214 | World Civilizations II | 4 |

| CHOICE 3: English Composition (See Note 2) | 4 Credits |
| CHOICE 4: Science/Mathematics (See Note 2) | 4 Credits |
| CHOICE 5: Social Science (See Note 2) | 4 Credits |
| CHOICE 6: Stage Technology (See Note 3) | 8 Credits |

MINIMUM TOTAL: 72

STAGE TECHNOLOGY CERTIFICATE OF ACHIEVEMENT

Curriculum Code: 0849 (Effective Fall 2000-Summer 2005)

This program consists of practical, hands-on courses that provide students with the necessary technical knowledge and skills needed for an entry-level position in the stage technology industry. Upon completion of this program, students may opt to enter the workforce, apply for the Michigan Stage Technician Apprenticeship Program, continue course work toward the Associate in Applied Arts Degree in Stage Technology, or use their skills in community service at schools, theatres, and churches.

REQUIREMENTS

| TOTAL: 27 CREDITS |

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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<td>ELTE 100</td>
<td>Electrical Safety Practices</td>
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<tr>
<td>ELTE 110</td>
<td>Practical Electricity</td>
<td>3</td>
</tr>
<tr>
<td>MFGM 125</td>
<td>Rigging</td>
<td>2</td>
</tr>
<tr>
<td>MTEC 120</td>
<td>Audio Production I</td>
<td>4</td>
</tr>
<tr>
<td>STEC 100</td>
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</tr>
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<td>3</td>
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<tr>
<td>THEA 111</td>
<td>Basic Stagecraft</td>
<td>2</td>
</tr>
<tr>
<td>WELD 100</td>
<td>Combilnation Welding</td>
<td>4</td>
</tr>
</tbody>
</table>

LIMITED CHOICE REQUIREMENTS

| TOTAL: 10 CREDITS |

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

| CHOICE 1: Stage Technology (See Note 1) | 10 Credits |

MINIMUM TOTAL: 37

NOTE

1. Students must take a minimum of 10 credits from one of the following areas: stage technology, electrical, media technology, welding, or theatre. Students must consult with the Stage Technology Program advisor regarding course selection.

SUGGESTED COURSE SEQUENCE

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>
<tr>
<td>ELTE 110</td>
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<td>3</td>
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<tr>
<td>MFGM 125</td>
<td>Rigging</td>
<td>2</td>
</tr>
<tr>
<td>MTEC 120</td>
<td>Audio Production I</td>
<td>4</td>
</tr>
<tr>
<td>STEC 100</td>
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<td>3</td>
</tr>
<tr>
<td>THEA 111</td>
<td>Basic Stagecraft</td>
<td>2</td>
</tr>
<tr>
<td>WELD 100</td>
<td>Combination Welding</td>
<td>4</td>
</tr>
</tbody>
</table>
# Customer Energy Specialist Certificate of Achievement

Curriculum Code: 0993 (Effective Fall 2000–Summer 2005)

This curriculum is designed to give students the technical knowledge and customer relations skills to determine customer energy needs in the negotiation, design, installation, and application of utility facilities. Customer energy specialists are employed by utility companies, governmental agencies, heating and cooling contractors, the construction industry, and engineering and architectural firms.

## PREREQUISITES

Students should see the Course Descriptions section of this catalog or the Course Schedule for course prerequisite information. Basic skills assessment and advising information may be found on page 6 of this catalog.

## INFORMATION

Contact the Technology Careers Department, Gannon Vocational-Technical Center, Room 136, telephone number (517) 483-1336.

### REQUIREMENTS

<table>
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<tr>
<th>CODE</th>
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<tr>
<td>ACCT</td>
<td>Accounting Info for Management</td>
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<td>BUS</td>
<td>Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>CNCP</td>
<td>PC Applications for Technology</td>
<td>3</td>
</tr>
<tr>
<td>DTDS</td>
<td>Drafting I</td>
<td>4</td>
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<td>DTDS</td>
<td>AutoCAD Basic 3-D</td>
<td>4</td>
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<tr>
<td>ELEC</td>
<td>Analog Problems</td>
<td>5</td>
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<td>ELEC</td>
<td>DC Circuits</td>
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<td>ELEC</td>
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<td>2</td>
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<tr>
<td>MATH</td>
<td>Technical Math I</td>
<td>4</td>
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<tr>
<td>MKTG</td>
<td>Principles of Marketing</td>
<td>3</td>
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<tr>
<td>PHYS</td>
<td>Applied Physics</td>
<td>4</td>
</tr>
<tr>
<td>SPCH</td>
<td>Oral Communication in the Workplace</td>
<td>3</td>
</tr>
</tbody>
</table>

**MINIMUM TOTAL: 42**

**NOTE**

1. Students who are employed or interning at Consumers Energy Company will also need to complete LEGL 215 and WRIT 124 for a total of 6 credits in addition to completing this certificate of achievement curriculum.

## SUGGESTED COURSE SEQUENCE

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

|  |  |  |
| |  |  |
| BUSN  | ACCT  | ELEC  |
| CNCP  | DTDS  | ELEC  |
| DTDS  | ELEC  | MATH  |
| ELEC  | MATH  | SPCH  |

**GENERAL TECHNOLOGY ASSOCIATE IN APPLIED SCIENCE DEGREE**

Curriculum Code: 0213 (Effective Fall 2000–Summer 2005)

This curriculum is designed to provide an individual with a multi-discipline technical background. The technical courses and supporting courses that comprise this degree provide the flexibility to match the student's interest with the skills necessary for job entry. For example, this curriculum is often pursued by apprentices who complete most of the requirements for this degree through their related training requirements and who also wish to earn an associate degree. Students interested in pursuing careers in a specific technical area should see a faculty advisor in their career choice.

## PREREQUISITES

Students should see the Course Descriptions section of this catalog or the Course Schedule for course prerequisite information. Basic skills assessment and advising information may be found on page 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, students may need to complete specific course work in mathematics. For information on how to fulfill all general education requirements, see page 23.

## INFORMATION

Contact the Technology Careers Department, Gannon Vocational-Technical Center, Room 136, telephone number (517) 483-1336.

### REQUIREMENTS

<table>
<thead>
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<th>CODE</th>
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<tbody>
<tr>
<td>DTDS</td>
<td>Industrial Blueprint Reading</td>
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</tr>
<tr>
<td>EMTA</td>
<td>Medical First Responder</td>
<td>4</td>
</tr>
<tr>
<td>MACH</td>
<td>Manufacturing Processes</td>
<td>4</td>
</tr>
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<td>MACH</td>
<td>Metallurgy, and Heat Treat</td>
<td>4</td>
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<td>QUAL</td>
<td>Intro Quality Assurance</td>
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<tr>
<td>WRIT</td>
<td>Technical Writing</td>
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**LIMITED CHOICE REQUIREMENTS**

**TOTAL: 30 CREDITS**

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

### CHOICE 1: General Education Core Areas

9 Credits

(See the GENERAL EDUCATION section above)

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

Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)

### CHOICE 2: Mathematics

8 Credits

- Intermediate Algebra
- Technical Math I
- Technical Math II

### CHOICE 3: Applied Technology Related (See Note 2)

21 Credits

**MINIMUM TOTAL: 60**

**NOTES**

1. Students completing REQUIREMENTS have fulfilled the requirements for this Core area.
2. Contact an advisor in GVT 136 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.

|  |  |  |
| |  |  |
| EMTA  | MACH  | DTDS  |
| MACH  | Lim.Ch.| Lim.Ch. |
| QUAL  | Lim.Ch.| WRIT  |
| Lim.Ch.| Lim.Ch.| Lim.Ch. |
## AIRLINE OPERATIONS

**CERTIFICATE OF COMPLETION**

Curriculum Code: 0918 (Effective Fall 2000–Summer 2005)

This curriculum is designed for individuals with travel experience who are interested in careers at airports or with airlines. It prepares the student with the basic skills and knowledge necessary for entry level positions as customer service representatives or flight attendants.

### PREREQUISITES

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

### INFORMATION

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

### REQUIREMENTS

<table>
<thead>
<tr>
<th>COURSE</th>
<th>TITLE</th>
<th>CREDIT HOURS</th>
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<tbody>
<tr>
<td>MGMT 150</td>
<td>Managing Customer Relations</td>
<td>3</td>
</tr>
<tr>
<td>SPCH 130</td>
<td>Fundamental of Public Speaking (See Note 1)</td>
<td>3</td>
</tr>
<tr>
<td>TRVL 135</td>
<td>Airline/Airport Operations</td>
<td>3</td>
</tr>
<tr>
<td>TRVL 140</td>
<td>Airline Computer Reservation</td>
<td>3</td>
</tr>
<tr>
<td>TRVL 190</td>
<td>Flight Attendant</td>
<td>3</td>
</tr>
</tbody>
</table>

**MINIMUM TOTAL:** 15

### NOTE

1. This course does not fulfill the Speech Communication Core requirement for those students planning to pursue an associate degree.

### SUGGESTED COURSE SEQUENCE

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

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<tr>
<td>TRVL 140</td>
<td>Airline Computer Reservation</td>
<td>3</td>
</tr>
<tr>
<td>TRVL 190</td>
<td>Flight Attendant</td>
<td>3</td>
</tr>
</tbody>
</table>

## TOUR CRUISE OPERATIONS

**CERTIFICATE OF COMPLETION**

Curriculum Code: 0920 (Effective Fall 2000–Summer 2005)

This curriculum is designed for individuals with travel experience who are interested in careers with cruise lines or tour operators. It gives students the basic skills and knowledge for entry level positions in businesses that offer group tours, tour packages, or cruises.

### PREREQUISITES

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

### INFORMATION

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

### REQUIREMENTS

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<tr>
<td>MGMT 239</td>
<td>Time and Stress Management</td>
<td>3</td>
</tr>
<tr>
<td>SPCH 130</td>
<td>Fundamental of Public Speaking (See Note 1)</td>
<td>3</td>
</tr>
<tr>
<td>TRVL 145</td>
<td>Intro Cruise Sales/Ground Trans</td>
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<tr>
<td>TRVL 210</td>
<td>Group Travel/Excursion Ops</td>
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</table>

**MINIMUM TOTAL:** 16

### NOTE

1. This course does not fulfill the Speech Communication Core requirement for those students planning to pursue an associate degree.

### SUGGESTED COURSE SEQUENCE

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

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<td>TRVL 145</td>
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<td>Group Travel/Excursion Ops</td>
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STUDENTS ARE RESPONSIBLE FOR COMPLETING ALL REQUIREMENTS AS STATED. THE ONLY OFFICIAL DOCUMENTATION OF PROGRAM COMPLETION STATUS IS AN AUDIT CONDUCTED BY THE REGISTRAR'S OFFICE THAT IS INITIATED WHEN STUDENTS APPLY FOR A DEGREE OR CERTIFICATE. STUDENTS ARE EXPECTED TO APPLY ONE SEMESTER PRIOR TO THE SEMESTER THEY INTEND TO GRADUATE.
# TRAVEL AGENCY OPERATIONS

## CERTIFICATE OF COMPLETION

**Curriculum Code: 0919 (Effective Fall 2000–Summer 2005)**

This curriculum is designed to give individuals with travel experience the basic skills and knowledge necessary for entry level positions in a travel agency.

**PREREQUISITES**

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

**INFORMATION**

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

## REQUIREMENTS

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</tr>
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<td>MGMT 239</td>
<td>Time and Stress Management</td>
<td>3</td>
</tr>
<tr>
<td>OADM 203</td>
<td>Professional Office Procedures</td>
<td>2</td>
</tr>
<tr>
<td>TRVL 100</td>
<td>Travel Agency Operations</td>
<td>3</td>
</tr>
<tr>
<td>TRVL 140</td>
<td>Airline Computer Reservation I</td>
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**MINIMUM TOTAL**

17

## SUGGESTED COURSE SEQUENCE

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

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<td>Professional Office Procedures</td>
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<td>Travel Agency Operations</td>
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<tr>
<td>TRVL 140</td>
<td>Airline Computer Reservation I</td>
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TRAVEL AND TOURISM
ASSOCIATE IN BUSINESS DEGREE

Curriculum Code: 6229 (Effective Fall 2000–Summer 2005)

Travel agents, tour escorts, cruise line and airline personnel plan trips and arrange lodging, modes of travel, and travel services for customers. They may specialize in foreign or domestic service, individual or group travel, or a specific geographical area. Travel customer service representatives are employed by airlines, cruise lines, tour companies, railroads, and tourism bureaus to provide travel information and arrange accommodations for tourists. They answer questions, offer suggestions, verify arrival/departure times, and provide literature on trips, excursions, sports events, concerts, and plays. Travel, tour, cruise and airline personnel may confer with customers by phone or in person, or plan trips for them in response to mail requests.

PREREQUISITES
Students should see the Course Descriptions section of this catalog or the Course Schedule for course prerequisite information. Basic skills assessment and advising information may be found on page 3 of this catalog.

GENERAL EDUCATION
General education is an important part of this program and includes a mathematics competency requirement. To fulfill the mathematics competency requirement, students may need to complete specific course work in mathematics. For information on how to fulfill all general education requirements, see page 23.

INFORMATION
Contact the Business Careers Department, Old Central Building, Room 210, telephone number (517) 483-1932.

REQUIREMENTS

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>TITLE</th>
<th>TOTAL: 55 CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CABS 110</td>
<td>Microsoft Office</td>
<td>3</td>
</tr>
<tr>
<td>CJSS 200</td>
<td>Info Sys Tech/Problem Solving</td>
<td>3</td>
</tr>
<tr>
<td>HMFS 101</td>
<td>Intro Hospitality/Tourism</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 150</td>
<td>Managing Customer Relations</td>
<td>3</td>
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<tr>
<td>MGMT 209</td>
<td>Time and Stress Management</td>
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<tr>
<td>MKTG 210</td>
<td>Marketing on the Internet</td>
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</tr>
<tr>
<td>CADM 203</td>
<td>Professional Office Procedures</td>
<td>2</td>
</tr>
<tr>
<td>SPCH 110</td>
<td>Oral Communic in the Workplace</td>
<td>3</td>
</tr>
<tr>
<td>TRVL 125</td>
<td>Destinations I</td>
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<tr>
<td>TRVL 130</td>
<td>Destinations II</td>
<td>3</td>
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<tr>
<td>TRVL 131</td>
<td>Destinations III</td>
<td>3</td>
</tr>
<tr>
<td>TRVL 140</td>
<td>Airline Computer Reservation I</td>
<td>3</td>
</tr>
<tr>
<td>TRVL 145</td>
<td>Intro Cruise Sales/ ground Tran</td>
<td>3</td>
</tr>
<tr>
<td>TRVL 190</td>
<td>Internship and Seminar</td>
<td>3</td>
</tr>
<tr>
<td>TRVL 200</td>
<td>Sales/Mktg for Travel/Tourism</td>
<td>3</td>
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<td>TRVL 205</td>
<td>Travel/Tourism Law</td>
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<td>TRVL 250</td>
<td>Airline Comput Reservation II</td>
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<td>WRIT 127</td>
<td>Business Writing</td>
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LIMITED CHOICE REQUIREMENTS

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<tr>
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<table>
<thead>
<tr>
<th>CHOICE 1: General Education Core Areas</th>
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<td>(See the GENERAL EDUCATION section above)</td>
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<tr>
<td>Writing Core Area (See Note 1)</td>
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<td>Speech Communication Core Area (See Note 1)</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>
<td>3</td>
</tr>
<tr>
<td>Mathematics Competency (See page 23 for information on how to fulfill this requirement. Course work may be needed.)</td>
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<table>
<thead>
<tr>
<th>CHOICE 2: Specific Travel Occupations (Choose one subchoice)</th>
<th>12-15 Credits</th>
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<tbody>
<tr>
<td>Subchoice 2A: Tour/Cruise Operations</td>
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<tr>
<td>HMFS 229</td>
<td>Convention/Meeting Management</td>
</tr>
<tr>
<td>MKTG 119</td>
<td>Mktg/Manage Your Presence Image</td>
</tr>
<tr>
<td>SPCH 120</td>
<td>Fundamental of Public Speaking</td>
</tr>
<tr>
<td>TRVL 145</td>
<td>Seminar at Sea</td>
</tr>
<tr>
<td>TRVL 210</td>
<td>Group Travel/ESCorting Ops</td>
</tr>
</tbody>
</table>

Students are responsible for completing all requirements as stated. The only official documentation of program completion status is an audit conducted by the Registrar's Office that is initiated when students apply for a degree or certificate. Students are expected to apply one semester prior to the semester they intend to graduate.
TRUCK DRIVER TRAINING

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TRUCK DRIVER TRAINING
CERTIFICATE OF COMPLETION

Curriculum Code: 0262 (Effective Fall 2000 - Summer 2001)

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 vehicle 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 Course Schedule for course prerequisite 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 2000/2001 academic year. For the most current and complete information, interested students should contact Lansing Community College, Truck Driver Training Program, 2417 28th Street, Augusta, MI 48012, telephone number (616) 731-4125.

REQUIREMENTS FOR ADMISSION TO THE TRUCK DRIVER TRAINING PROGRAM

Curriculum Code: 0718

In order to be considered as a candidate for this program, an applicant must meet the following admission requirements:

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 possess 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 the Secretary of State personnel in the L.C.C. classroom. Persons shall be considered ineligible for a T.I.P. if they:
   • Fail to pass the written examination.
   • Have been charged in the 24 months immediately preceding application with a total of 12 or more points.
   • Have had their license suspended or revoked in the 36 months immediately preceding application unless that suspension or revocation was due to a violation for temporary medical condition, failure to appear for re-exam or failure to appear in court for a traffic violation, an unsatisfied judgement, or a no-fault insurance violation.
   • Have been convicted of a 6 point violation or an impaired driving charge (4 points) in the 24 months immediately preceding application.
   • Applicants residing outside the State of Michigan must supply a copy of their own driving record from the State in which they are licensed and must possess a T.I.P. from their licensing State.

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 calculation.

e. Be able to pass the Department of Transportation (D.O.T.) physical examination. The physical form and card can be obtained from the LCC Truck Driver Training Program. PLEASE NOTE: THE D.O.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 exam is the applicant’s responsibility.

f. Be at least 18 years old. Those persons between the ages of 18 & 21 should realize job opportunities are limited for persons in this age bracket and, they will more than likely experience difficulty in obtaining employment. Graduates must be 21 years of age to drive outside the State of Michigan.

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 dropped.

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

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>TOTAL CREDITS</th>
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</thead>
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<td>TOTAL</td>
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<td>TOTP 110</td>
<td>0 CREDIT HOURS</td>
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<td>0 CREDIT HOURS</td>
</tr>
<tr>
<td>TOTP 112</td>
<td>0 CREDIT HOURS</td>
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</tbody>
</table>

NOTE

1. The Program provides 140 hours in range and highway driving and 80 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.

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

Students planning on transferring to a four-year institution should be aware that universities and colleges differ widely in the courses they accept for transfer. In order to achieve maximum transferability of courses, students should consult an academic advisor or counselor at the Counseling Services Department, Suite 2300, Gannon Vocational-Technical Center.

In addition, students intending to transfer should follow the transfer curriculum guide designed specifically for the major and the institution in which they intend to enroll. Students should understand that transfer guides are not LCC degree guides. Students intending to earn an LCC degree prior to transferring should consult an academic advisor or counselor.

Curricular guides are available for many, but not all, possible transfer programs. If there is not a curriculum guide available for a preferred major or institution, students are encouraged to contact the Admissions Office at the transfer institution of interest. It is the student's responsibility when transferring from LCC to be aware of the transfer institution's policies and program requirements.

Curriculum guides and additional transfer information may be obtained by requesting the information request card attached to the back cover of this publication or by contacting: LCC Counseling Services Department, Suite 2300, Gannon Vocational-Technical Center; Tel (517) 483-1904; Fax (517) 483-1972; E-mail mcguinnn@lccmail.lcc.edu.

When requesting information, please indicate area(s) of study and transfer college/university of 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
- Applied Mathematics
- Applied Physics
- Architecture
- Art
- Art History
- Athletic Training
- Atmospheric, Oceanic, and Space Sciences
- Audiology and Speech Sciences
- Automotive and Heavy Equipment Management
- Aviation Flight Science – Pilot
- Aviation Maintenance Technology
- Behavioral Science
- Biochemistry
- Biological Science
- Biology
- Biotechnology
- Broadcasting
- Building Construction Management
- Business
  - Accounting
  - Accounting Information Systems
  - Administration
  - Banking
  - Business Studies
  - Computer Management/Systems Economics
  - Finance
  - Food Industry Management
  - Food Marketing
  - General Business
  - Health Care/Services Administration
- Hospitality
  - Human Resources Management
  - Industrial Management
  - Information Systems
  - Insurance
- Integrated Supply Management
  - International Logistics
  - Management
  - Marketing
  - Operations Management
  - Organizational Behavior
  - Product Operation & Management
  - Public Administration
  - Retail
  - Statistics
  - Chemistry
  - Choral Development
  - Chiropractic, Pre-Professional
  - Clinical Laboratory Science
- Communication
  - Interpersonal and Public
  - Scientific and Technical Studies
  - Technical and Professional Communication Arts
  - Computational Mathematics
  - Computer Information Science
  - Computer and Mathematical Sciences
- Computer Information/Management
  - Computer Information Systems
  - Computer Networks and Systems
  - Computer Science
  - Conservation
  - Construction Management
  - Criminal Justice
  - Criminology
  - Crop and Soil Science
  - Dental Hygiene
  - Dentistry, Pre-Professional
  - Dietetics
  - Earth Science
  - Economics
  - Education
  - Elementary
- Physical
  - Allied Health
  - Biology
  - Business
  - Chemistry
  - Home Economics
  - Industrial Mathematics
  - Music
  - Technology
  - Vocational Technology
  - Special Engineering
  - Administration
  - Arts
  - Aeronautical
  - Aerospace
  - Biosystems
  - Chemical
  - Civil
  - Computer
  - Construction and Management
  - Electrical
  - Environmental
  - Geological
  - Industrial and Operations
  - Marine & Naval Architecture
  - Material Science
  - Mechanical
  - Metallurgical
  - Mining
  - Nuclear
  - Paper
  - Physics
  - Surveying
- Engineering Technology
  - Automated Manufacturing
  - Automotive
  - Electrical/Electronics
  - Heating, Ventilation, Air Conditioning and Refrigeration
  - Heavy Equipment Service Manufacturing
  - Product Design
  - Welding
- English
  - Environmental & Applications Studies
  - Environmental Chemistry
  - Environmental Science
  - Exercise and Sport Science
  - Facilities Management
  - Family Consumer Resources
  - Family Community Services
  - Family Life Education
  - Family Studies
  - Fire Science General Emphasis
  - Fisheries and Wildlife Management
  - Food
  - Industry Management
  - Science
  - Service Administration
  - Forestry
  - Geography
  - Geologic Sciences
  - Geology
  - Health Fitness in Prevent and Rehab Program
  - Health Information Management
  - History
  - Home Economics
  - Horticulture

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MACRAO TRANSFER AGREEMENT

In 1973 the Michigan Association of Collegiate Registrars and Admissions Officers proposed the MACRAO Transfer Agreement. The MACRAO Transfer Agreement was created to simplify the transfer of students from two-year to four-year institutions. The agreement stipulates that 30 semester credit hours of 100-level and above, comparable, general coursework will be granted to ensure transferability to participating universities. These credits will be applied toward a student's general education requirements. Completion of requirements for the MACRAO Transfer Agreement does not necessarily mean that a student has completed the requirements for a specific Lansing Community College associate degree.

The basic two-year requirements are:

- English Composition .................. 6 semester hours minimum
- Science and Mathematics .......... 8 semester hours minimum
- Social Science ..................... 8 semester hours minimum
- Humanities ......................... 6 semester hours minimum

The following establishes the approved list of LCC courses under the four major distribution requirements for the MACRAO Transfer Agreement. A course can be used to satisfy only one category even though it may appear in more than one category. Only courses in which at least 2.0 is received may be applied to this agreement.

1. English Composition (minimum of six (6) semester credit hours)
   Any one from each group:
   1. WRIT 121 or WRIT 131
   2. WRIT 122 or ENGL 122 or WRIT 132 or ENGL 132
   A student with waiver of WRIT 121 indicated on the transcript must elect a second course from the 200-level offerings in WRIT or ENGL. Waiver of WRIT 121 should be printed on the student's transcript.

II. Science and Mathematics (minimum of eight (8) semester credit hours)
   Choose courses in at least two (2) subject areas, with a minimum of one laboratory science course. Unlisted courses indicate a laboratory course.
   *Biological Science: ANAT 145, 151, 152, 201; BIOL 120, 121, 127, 128, 210, 260; 265; ISCI 121; MIRC 203 AND 204; PPOM 123; PHGY 202
   *Mathematics and Statistics: MATH 121, 122, 126, 130, 141, 151, 152, 201, 202; STAT 170, 215. (Note: MSU does not accept Math/Stat courses for the science requirement.)
   *Physical Science: ASTR 201; CHRM 120, 125, 151 and 161; GEOL 221, 222, 230; ISCI 121, 121; METR 220; PHYS 251 and 252, 215 and 220

III. Social Science (minimum of eight (8) semester credit hours)
   Choose courses in at least two (2) subject areas.
   *Economics: ECON 120, 140, 201, 202, 213
   *Geography: GEOG 120, 200, 202
   *Political Science: POLS 120, 121, 250, 270
   *Psychology: CHEV 101; CJUS 255; PSYC 200, 212, 293, 250, 250
   *Sociology/Anthropology: ANTH 270; CJUS 101, 102, 106; GEOG 100, 120, 254, 255, 260; SOWK 101

IV. Humanities (minimum of eight (8) semester credit hours)
   Take one of the following combinations:
   - HIST 211 and 212 or 214; HUMS 211 and 212; HUMS 213 and 214; ENGL 211 and 212; PHIL 211 and 212
   - Take courses in at least two (2) of the following areas:
     - Art History: HUMS 120, 211, 212
     - Foreign Languages: FREN 121, 122, 201, 202; GERMAN 121, 122, 201, 202; JPN 121, 122, 201, 202; SPAN 121, 122, 201, 202.
     - Humanities: HUMS 163, 213, 214, 215, 240, 250
     - Literature: ENGL 201, 202, 233, 211, 212, 255, 266, 269, 267, 270, 290
     - Performing Arts: MUSC 199, 240, 241; THEA 210
     - Philosophy: PHIL 151, 152, 153, 211, 212, 290
     - Religion: RELG 211, 212, 241, 242, 250

NOTES
1. Students are advised to also review specific transfer curricular guides. Some transfer institutions, for example, may require both a biological and physical science to satisfy the requirements for the degree.
2. Students seeking an LCC associate degree must fulfill specific graduation requirements including the LCC General Education Core requirements. See the General Information section of this catalog for additional details.

For further information and advising, contact an LCC academic advisor or counselor located in Suite 2300, Gannon Vocational-Technical Center, (517) 483-1904. The following four-year institutions are signatory to the MACRAO Transfer Agreement:

- Adrian College
- Albion College
- Alma College
- Aquinas College
- Baker College
- Calvin College
- Central Michigan University
- Cleary College
- Davenport College
- Eastern Michigan University
- Ferris State University
- Grand Valley State University
- Hope College
- Kalamazoo College
- Kettering University (formerly GMU)
- Lake Superior State University
- Lawrence Technological University
- Madonna University
- Michigan State University
- Michigan Technological University
- Northern Michigan University
- Oakwood University
- Olivet College
- Rochester College (formerly Michigan Christian College)
- Saginaw Valley State University
- St. Mary's College
- Siena Heights University
- Spring Arbor College
- Western Michigan University

*Some limitations may apply. Check with individual college/university
HOW TO READ COURSE DESCRIPTIONS

Each course description has seven (7) categories of information as follows:
1. Course code
2. Course title
3. Number of semester credit hours
4. Prerequisite
5. Course description
6. Semester planned

For example:

<table>
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<tr>
<th>COURSE CODE</th>
<th>COURSE TITLE</th>
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<tr>
<td>AVEL 220</td>
<td>Avionics Systems I</td>
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</tr>
</tbody>
</table>

Prerequisite: AVEL 190 2.0 minimum and AVEL 200 2.0 minimum
Restriction: Avionics Majors
Co-requisite course: AVEL 221
Recommended: AVEL 191
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)*

*F = Fall; Sp = Spring; Su = Summer

Previous courses, skill levels, training and/or experience required for enrollment. Other prerequisites may be added. See Course Schedule or department for current information.

Indicates when department plans to offer course, but does not guarantee that the course will be offered. See Course Schedule or department for current information.

COURSE CODES USED IN DESCRIPTIONS

Courses are listed in course code order. The sequence is as follows:
ACCG  Accounting
AERO  Aerospace Studies
AGBI  Agriculture
AHCC  Allied Health Courses
AIBL  American Institute of Banking, Lansing
ANAT  Anatomy
ANTH  Anthropology
ARCH  Architecture
ARTS  Art, Design and Multimedia
ARWS  Art Seminars and Workshops
ASTR  Astronomy
AUTO  Automotive
AVAF  Aviation Airliner Maintenance
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
BCDS  Business Development Seminars
BIO  Biology
BLOK  Related Studies
BLTR  Building Trades
BUSN  Business
CABS  Computer Applications Using Business Software
CHEE  Continuing Health Care
CHDV  Child Development
CHEM  Chemistry
CHSE  Community Health Services
CISP  Computer Information Systems for Business
CIVL  Civil Technology
CJUS  Criminal Justice
CNCP  Computerized Numerical Control Program
COOP  Cooperative Education
CPS  Computer Science
CRFT  Court Reporting
CUAI  Credit Union Accounting and Insurance
CUMA  Credit Union Management
DADA  Dental Assistant/Dental Hygiene
DANC  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 Seminar
ENTC  Emergency Medical Technology
ENGL  English
ENRI  Enrichment
ENVI  Environmental Science
ESLP  English as a Second Language
ESLS  English as a Second Language Seminar
FILM  Film Production and Direction
FIRE  Fire Science
FLNG  Foreign Language
FREN  French
GEOG  Geography
GEOL  Geology
GEOG  Geology
GEOG  Geology
GRG  Geographic Information Systems
GRMN  German
HIST  History
HMS  Hotel/Motel and Food Service Operations
HONS  Honors
HORT  Horticulture
HUMS  Humanities
HUSE  Human Services
HVAC  Heating, Ventilating, and Air Conditioning
IDMS  Diagnostic Medical Sonography
IMAG  Photography Technology
INAN  Industrial Automation
INSU  Insurance
INTD  Interior Design
IRXT  Radiologic Technology
ISCI  Integrated Science
JAPN  Japanese
JRN  Journalism
LABR  Labor Relations

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ACCG 100 - ACCG 290

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DESCRIPTIONS

ACCG 100 Practical Accounting Non-Major
Prerequisite: None
Students 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 Info for Management
Prerequisite: None
Students will learn to interpret financial statements and use this information for analytical, budgeting, and decision-making. (F, Sp)

ACCG 140 Income Tax Preparation
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 Taxes
Prerequisite: None
Recommended: ACCG 100 or Equivalent Work Experience
This course covers laws affecting payroll, calculation of payroll and payroll taxes using both manual and computer payroll systems, preparation of tax forms for pay- roll taxes, sales and use taxes, and personal property taxes. (Su)

ACCG 210 Principles of Accounting I
Prerequisite: None
Recommended: Algebra Knowledge
Principles of Accounting I is the first class of a two-semester sequence focusing on financial accounting, including accounting for service organizations and mer- chandisers. 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
Prerequisite: ACCG 210 2.0 minimum
Recommended: Intermediate Algebra or Higher
Principles of Accounting II is the second course in the two-semester accounting sequence. Topics include statement of cash flows, budgeting and other managerial reports, capital budgeting, short-term decision-making, equity investments, time value of money, bonds, manufacturing accounting, job and process cost accounting systems, and accounting for quality and cost management. (F, Sp, Su)

ACCG 220 Intermediate Accounting I
Prerequisite: ACCG 211 2.0 minimum
Recommended: Electronic Spreadsheet Experience
The purpose of this course is to review and expand upon the concepts of financial accounting that are 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 inventory. (F, Sp)

ACCG 221 Intermediate Accounting II
Prerequisite: ACCG 220 2.0 minimum
This course provides an in-depth coverage of long-term assets and liabilities, financial instruments, leases, pensions, accounting for income taxes, stockhold- ers' equity, and earnings per share. (Sp)

ACCG 230 Cost Accounting
Prerequisite: ACCG 211 2.0 minimum
Recommended: Electronic Spreadsheet Experience
This course focuses on cost-volume-profit analysis, cost accounting 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 cap- ital budgets. Computer applications are emphasized. (F)

ACCG 231 Managerial Accounting
Prerequisite: ACCG 230 2.0 minimum
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; risk and yield variances; uncertainty; vari- ance investigation; inventory management; cost management; strategic planning; and management control. (Sp)

ACCG 235 Budgeting
Prerequisite: ACCG 211 2.0 minimum
This course covers the budget cycle of an organization, both public and private from a managerial perspective. Topics covered include budgetary terms, concepts and general format, performance budgeting, program budgeting, zero base bud- geting, budgeting approval process, budgetary control, and the auditing phase of a budget. (F)

ACCG 240 Federal Income Tax I
Prerequisite: ACCG 211 2.0 minimum
This class is the first in a two-semester sequence in federal income tax. This course deals with taxation of individuals from a historical and theoretical perspective, as well as preparation of individual income tax returns under current tax law. (F, Sp)

ACCG 241 Federal Income Tax II
Prerequisite: ACCG 240 2.0 minimum
This class is the second in a two-semester sequence in federal income tax. This course deals with the taxation of corporations, partnerships, estates, trusts, and tax exempt entities from a historical and theoretical perspective, as well as prep- aration of tax and information returns under current tax law. (Sp)

ACCG 245 Accounting Internship
Prerequisite: ACCG 210 2.0 minimum and Department 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
Prerequisite: ACCG 221 2.0 minimum
This course covers business consolidations, foreign currency accounting, and partnerships in depth. In addition, the course provides an overview of govern- mental and nonprofit accounting. (Su)

ACCG 260 Accounting Systems
Prerequisite: ACCG 210 2.0 minimum
Recommended: Keyboarding Experience
Accounting Systems prepares students to work with and design information sys- tems and to use the scientific methods in problem solving. Issues and problems related to microcomputers and other technology on accounting systems are emphasized. Students analyze systems, work with manual and computerized accounting systems, database design, and problem solving with spreadsheets. (F, Sp, Su)

ACCG 266 Independent Study Accounting
Prerequisite: Department Approval
With this course, students will learn advanced accounting topics as a part of a class, an independent study, or a project. Grading criteria and course objectives are determined at the first meeting. The course requires a minimum for each credit earned of either 12 classroom hours or 48 independent study hours. (F, Sp, Su)

ACCG 271 Principles of Finance
Prerequisite: ACCG 211 2.0 minimum
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
Prerequisite: ACCG 211 2.0 minimum
Applications of fund accounting principles are applied to governmental (local and state) and not-for-profit entities. Students learn skills necessary to understand the organization, accounting functions, auditing, and financial reporting practices of governmental and nonprofit organizations. Governmental Accounting Standards Board (GASB) and Financial Accounting Standards Board (FASB) requirements are taught. (F)

ACCG 290 Auditing
Prerequisite: ACCG 220 2.0 minimum
In this course, students will learn the theory and practice of auditing in accordance with generally accepted auditing standards. (F)
ACCG 295 CPA Review - Tax, Mgr, Cost, Gov
Prerequisite: None
Recommended: Meet Requirements for CPA Examination
The course is designed to provide CPA exam candidates with a review of federal taxation, cost, managerial, governmental and nonprofit accounting. Emphasis is given to typical exam questions and strategies to answer them correctly. (F, Sp)

ACCG 296 CPA Review - Business Law
Prerequisite: None
Recommended: Meet Requirements for CPA Examination
This course is designed to provide CPA exam candidates with a review of business law, especially the provisions of the Uniform Commercial Code. Emphasis is given to typical exam questions and strategies to answer them correctly. (F, Sp)

ACCG 297 CPA Review - Auditing
Prerequisite: None
Recommended: Meet Requirements for CPA Examination
This course is designed to provide CPA exam candidates with a review of audit concepts, assumptions, and procedures. Emphasis is given to typical exam questions and strategies to answer them correctly. (F, Sp)

ACCG 298 CPA Review - Fin Acct/Report
Prerequisite: None
Recommended: Meet Requirements for CPA Examination
This course is designed to provide CPA exam candidates with a review of the theory and practice of financial accounting and reporting for business enterprises. Emphasis is given to typical exam questions and strategies to answer them correctly. (F, Sp)

AERO - AEROSPACE STUDIES

AERO 111 Air Force Today I
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
Prerequisite: None
This course provides an introduction to the U.S. Air Force today. Course topics include officership and professionalism, group leadership problems, and introduction to communication skills. Includes a leadership laboratory. (Sp)

AERO 211 Development of Air Power I
Prerequisite: None
This course focuses on Air Force heritage. Course topics include evaluation of air power concepts and doctrine, introduction to ethics and values, introduction to leadership, and the continuing application of communication skills. Includes a leadership laboratory. (F)

AERO 212 Development of Air Power II
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)

AGRI - AGRICULTURE

AGRI 101 Principles/Precision Agritech
Prerequisite: None
This course introduces the field of precision agricultural technology. The combining of the latest technologies, i.e., Global Positioning Systems and Integrated Pest Management, make traditional agricultural practices as accurate and customized as possible for each specialized crop. (F, Sp)

AGRI 106 Disease/Insect Agronomic Crops
Prerequisite: None
This course is for the professional applicator or farm operator interested in a basic knowledge of insects, diseases, vertebrates, and microorganisms that affect agronomic crops. Environmental problems, soil, fertilizers, planting, integrated pest management, and problem solving techniques will be stressed. Can be used toward pesticide certification by the Michigan Department of Agriculture. (Sp)

AGRI 206 Vegetation and Weed Management
Prerequisite: None
Students will develop skills necessary to monitor, control, and identify by species both vegetation and weed plants. Vegetation will be evaluated from seedling to mature stage for proper control measures by both natural and chemical controls. Various chemicals will be judged for environmental impact and effective control. (F, Sp)

AGRI 201 Plant/Sustainable Agriculture
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)

AGRI 202 Agri Soils and Crop Management
Prerequisite: None
This course covers all aspects of soils related to agricultural production of food and fiber crops. Soil classification, texture, composition and conditions will be analyzed, evaluated and managed. Soil conditions relating to environmental fertilization and composition problems will be evaluated. Soil erosion and conservation management practices will also be highlighted. (F, Sp)

AGRI 211 Agricultural Crop Production
Prerequisite: None
This course will focus on the basic components of crop production in the modern agricultural environment. Crop identification management and harvesting techniques will be highlighted for the major crops utilized in today's marketplace. Crop production techniques will be emphasized with a thorough evaluation of modern technology practices. (F, Sp, Su)

AGRI 212 Vegetable Crop Production
Prerequisite: None
This agricultural production course will cover the seed production, planting, management, IPM and harvesting of vegetable crop plants. Vegetable crops such as sweet corn, tomatoes, peppers, beans, spinach, melons, peas and cold weather crops will be discussed. Vegetable crop marketing in the Great Lakes region will also be discussed. (F, Sp)

AGRI 213 Ag Site Specific Research Tech
Prerequisite: None
This course will evaluate the various new technologies available to farmers and agriculturalists. Technologies such as computers, GIS systems, GPS receivers, field monitors, sensors, and computers, etc., will be evaluated as to their function and incorporation into specific farming production practices. IPM and crop genetic technologies will also be discussed. (F, Sp)

AHCC - ALLIED HEALTH COURSES

AHCC 104 Patient Care Principles
Prerequisite: Admission to Radiologic Technology Program
Principles of basic patient care are presented to assist the non-nursing student in managing patients in the health care setting. Information and simulated practice will include surgical aseptic techniques, infection control procedures, vital signs, handling medical emergencies, and other practices emphasizing the physical and emotional aspects of basic patient care. (F)

AHCC 106 Introduction to Pathology
Prerequisite: ANAT 145, 2.5 minimum
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 119 Pharmacology/Allied Health
Prerequisite: ANAT 145, 2.5 minimum
This course is designed to familiarize the student with common medications encountered in health care occupations. Emphasis is on drug categories and the responsibilities associated with medication administration. (F, Sp, Su)
AHCC 111 - ARCH 126

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AHCC 111  EKG for Health Care Providers
Prerequisite: None
Recommeded: Health Careers Applicant or Professional
This course is designed to teach the basic skills of electrocardiography necessary to perform, process, and explain the electrocardiogram. An overview of anatomy and physiology of the cardiovascular system, operation of the electrocardiograph and recording EKGs, cardiac pathology, and basic cardiac rhythm recognition will be presented. (F, Sp)

AHCC 112  Health Law and Ethics
Prerequisite: None
Recommended: Health Careers Applicant or Professional
This course presents for discussion legal and ethical issues arising from the organization and delivery of health care services. Topics include contracts, torts, business law, medical recordkeeping and retention; physicians’ public duties; licensure, certification and regulation of health professionals; consent for treatment; and exploration of issues arising from various biomedical topics. (F, Sp)

AIBL 101  Principles of Banking
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)

ANAT 145  Introductory Anat & Physiology
Prerequisite: Reading Level 5 and Writing Level 6
An introductory course in human anatomy and physiology which combines lecture and laboratory experiences to provide a basic understanding of the structure and function of body systems. Designed for vocational programs, including dental assistant and medical transcriptionist, as well as non-science majors. (F, Sp, Su)

ANAT 201  Human Anatomy
Prerequisite: Reading Level 5 and Writing Level 6
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
Prerequisite: Reading Level 5 and Writing Level 5
This course explores ways of life for societies worldwide using anthropological theory and methodology. Basic institutions of human society such as kinship, religion, law, politics, and economics are examined to provide a better understanding of the diversity of contemporary societies. (Sp)

ANTH 271  Medical Anthropology
Prerequisite: Reading Level 5 and Writing Level 5
An overview of concepts used in anthropology of health and illness, and delivery of health care in diverse settings. Biocultural and cultural approaches to illness are examined from a comparative cross-cultural perspective against a background of evolutionary ecology. Illustrating how therapeutic systems form an integrated aspect of society and culture. (F)

ANTH 275  Physical Anthr and Archaeology
Prerequisite: Reading Level 5 and Writing Level 6
Recommended: SOC 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. (F)

ANTH 276  World Archaeology
Prerequisite: Reading Level 5 and Writing Level 6
Recommended: ANTH 270 and/or SOC 120
A general survey of archaeology. Includes an overview of the history of the field and the basic theories and methods employed in the study of prehistoric and historic cultures. Archaeological sites are used as examples. (Sp)

ARCH 100  Introduction to Architecture
Prerequisite: Math Level 3
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
Prerequisite: Math Level 3
Recommended: ARCH 100 or Equivalent
This course is the first of a four-part series of residential and light commercial architectural drafting courses. Students will use previously obtained basic drafting techniques to draw a series of residential details. The development of professional quality drafting, lettering, research, and communication techniques will be emphasized. (F, Sp, Su)

ARCH 102  Architectural Drafting II
Prerequisite: ARCH 101 1.0 minimum
Recommended: ARCH 121 or Concurrently
This course is the second in a four-part series of residential and light commercial architectural drafting courses. Students will use previously obtained basic drafting techniques and knowledge of residential detailing to design and draft basic architectural design problems, residential floor plans, elevations, and building sections. (F, Sp, Su)

ARCH 121  Visual Communication I
Prerequisite: None
Recommended: ARCH 100 or Equivalent
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
Prerequisite: None
Recommended: ARCH 121
This course is a continuation of Visual Communication I. Students will gain knowledge of basic color rendering techniques using a variety of media. (Sp)

ARCH 123  Visual Communication III
Prerequisite: None
Recommended: ARCH 122
The goal of this course is to use the students' previously obtained graphic production knowledge to realistically depict three-dimensional architectural spaces and related enclosures. An emphasis on developing the use of light and shadow and the true depiction of textures and materials will be taught. (F)

ARCH 126  Architectural Model Building
Prerequisite: None
Students in this course will enhance their design and communication skills by developing various techniques for building three-dimensional architectural models. Examples constructed will range from the most basic of study models, using readily available materials, to more sophisticated presentation models. (F, Sp)
ARCH 126 Residential Planning
Prerequisite: None
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
Prerequisite: None
This is an introduction to the field of urban and regional planning. The development of planning theory, processes 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 136 Architecture Portfolio
Prerequisite: None
Recommended: ARCH 102 or Equivalent
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
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
Prerequisite: None
Recommended: ARCH 141
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, theorists, and individuals who have had the greatest impact on architecture and decorative arts to the present day. (F, Sp)

ARCH 146 Preser/Adaptive Reuse Architecture
Prerequisite: None
This course is designed as an overview of the principles and practices of preservation, restoration, and adaptive reuse architecture. Students will have the opportunity to work on a project of their choosing while being introduced to research methods, publications, and examples of preservation and new uses for existing structures. (F, Sp, Su)

ARCH 181 Barrier-Free Design
Prerequisite: None
This course covers the design, construction, and inspection aspects of commercial buildings required to be accessible to the handicapped. Michigan and federal laws, barrier-free residential design, and design practice problems are included. (F, Sp, Su)

ARCH 182 Universal Design
Prerequisite: None
Recommended: ARCH 100 and ARCH 181
This course is designed for students with some architectural drafting experience. Students will apply ADA laws as well as Michigan's Barrier Free or Universal Design to residential design. Both study cases and original design projects will be used. (F, Sp)

ARCH 201 Architectural Drafting III
Prerequisite: ARCH 102 1.0 minimum and Math Level 4
Recommended: ARCH 141
This course is the third of a four-part series of residential and light commercial architectural drafting courses. Students will use previously obtained drafting, research, and presentation skills to design, delineate, present, and draft a light commercial project from basic schematics to working drawings. (F, Sp, Su)

ARCH 202 Architectural Drafting IV
Prerequisite: ARCH 201 1.0 minimum
Recommended: ARCH 271 or Concurrently
This course is the conclusion in a four-part series of residential and light commercial architectural drafting courses. Students will use previously obtained drafting, research, and presentation skills to complete the working drawing floor plans, elevations, sections, and details for the light commercial projects started in the preceding course. (Sp)

ARCH 211 Design Studio I
Prerequisite: None
Recommended: ARCH 101 or Concurrently
This course is an introduction to the basic theories and methods of architectural design, problem-solving techniques, and design methodologies using contemporary architects as examples. Students will be given a series of problem-solving exercises and will be instructed in developing presentation and verbal techniques to present their solutions. (F, Sp)

ARCH 212 Design Studio II
Prerequisite: ARCH 211 2.0 minimum
This course will use the skills developed in ARCH 211 to expand the student's understanding and processes for designing three-dimensional architectural space. Using models and various graphical mediums, students will explore the effects of scale, circulation, light, color, and texture on the spaces and forms created. (Sp)

ARCH 213 Facilities Design
Prerequisite: None
Recommended: ARCH 101 or Equivalent
In this course, students will explore, tour, and study the design theory behind a full range of structures used for office and manufacturing purposes. Systems of manufacturing and how they relate to the structures which house them will be studied. (F, Sp)

ARCH 221 Architectural DataCAD I
Prerequisite: None
Recommended: ARCH 100 or Equivalent and Windows Experience
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
Prerequisite: None
Recommended: ARCH 221
This course is a continuation of ARCH 221 and will develop students' skills by introducing advanced two-dimensional operations, the creation and use of templates, symbols, and a complete overview of DataCAD's macro programs. Complete three-dimensional modeling will be taught including complex 3-D entities for developing professional presentations. (F, Sp)

ARCH 225 Arch DataCAD Independent Study
Prerequisite: ARCH 222 2.0 minimum and Department Approval
This is an advanced level, computer-aided drafting and design, independent study course, using DataCAD software. After completing all available structured DataCAD courses, students 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
Prerequisite: None
Recommended: ARCH 100 or Equivalent and Windows Experience
This entry-level course introduces AutoCAD, a PC-based computer graphics system, for architectural applications. Students will concentrate on two-dimensional drafting 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
Prerequisite: None
Recommended: ARCH 231
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, slide shows and rendering, basic 3-D solids, program customization, and an introduction to AutoLISP. (F, Sp)
ARCH 235 Arch AutoCAD Independent Study 1-4
Prerequisite: ARCH 235 2.0 minimum and Department Approval
This is an advanced-level, computer-aided drafting and design, independent study course, using AutoCAD software. After completing all available structured AutoCAD courses, students will outline, research, design, and construct a project of their own selection, with the approval and guidance of the instructor. (F, Sp, Su)

ARCH 237 Arch Computer Rendering 3
Prerequisite: None
Recommended: ARCH 222 or ARCH 236 and Windows Experience
This course is intended for the advanced architectural computer graphics student. Using the three-dimensional graphics skills obtained in one or more of the architectural preliminary computer graphics courses, students will learn to produce three-dimensional wire frame models, advanced architectural computer renderings, and photo realistic pictorials. (Sp)

ARCH 241 Arch AES Computer Graphics I 4
Prerequisite: None
Recommended: ARCH 100 or Equivalent
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 242 Arch AES Computer Graphics II 4
Prerequisite: None
Recommended: ARCH 241
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 245 Arch AES Independent Study 1-4
Prerequisite: ARCH 245 2.0 minimum and Department Approval
This is an advanced-level, computer-aided drafting and design independent study course using AES software. After completing all available structured AES courses, students 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 4
Prerequisite: None
Recommended: ARCH 100 or Equivalent and Windows Experience
This class is an introductory computer graphics course using the MicroStation computer graphics software. Students will learn to develop basic 2-D geometry, editing commands, file manipulation, and utilization of layers, views, text, dimensioning, and plotting. (F, Sp)

ARCH 252 Architectural MicroStation II 4
Prerequisite: None
Recommended: ARCH 251 or Equivalent
This is an intermediate-level computer graphics course. Using the MicroStation software, students will learn to create and manipulate 3-D drawing surfaces and solids, 3-D cells, rendering, lighting, material layers, 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 1-4
Prerequisite: ARCH 255 2.0 minimum and Department Approval
This is an advanced-level, computer-aided drafting and design independent study course using MicroStation software. After completing all available structured MicroStation courses, students 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 4
Prerequisite: Math Level 4
Recommended: ARCH 101 or Concurrently
This course introduces the principles of statics and relates the application of physical forces to structural materials and elements. The structural and design properties of steel, wood, and concrete will be studied. The ability to read structural tables and accurately make calculations will be emphasized. (F, Sp)

ARCH 273 Environmental Systems 4
Prerequisite: None
Recommended: ARCH 101 or Concurrently
This course is designed for architecture and interior architecture students. All elements affecting the interior environment of a commercial or residential structure, such as lighting, HVAC systems, and acoustics, will be studied. Calculations and the sizing of systems will be part of all sections. (F)

ARCH 274 Arch Professional Practice 3
Prerequisite: None
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 278 Energy Efficient Design 4
Prerequisite: None
Building science is used to examine how buildings work. The concept of systems integration is studied from the perspective of the building and its occupants in their environmental context. Computer assisted calculation of heat loss, passive solar design and economic analysis will be covered. Communication and analytic skills will be developed through classroom activities and research. (F, Sp)

ARCH 283 Materials of Construction 4
Prerequisite: None
Recommended: ARCH 101 or Equivalent
This course consists of the evaluation of the various characteristics of all materials commonly used in residential and light commercial structures. Students will develop a sensitivity to the use of building products based on a knowledge of their properties, limitations, and availability. (F, Sp)

ARCH 295 Arch Independent Study 1-4
Prerequisite: Department Approval
This course provides the second-year architecture student with the opportunity to pursue a project of personal interest under the supervision of an instructor. With the approval and under the guidance of the instructor, the student will outline research, design, and construct a project of his or her own selection. (F, Sp, Su)

ARTS 102 2-Dimensional Design 3
Prerequisite: Reading Level 3 and Writing Level 2
Recommended: Macintosh Experience
Universal elements and principles of two-dimensional design, design theory and process, with emphasis on composition and its application to black-and-white and color media. (F, Sp, Su)

ARTS 103 3-Dimensional Design 3
Prerequisite: ARTS 102 2.0 minimum or IMAG 112 2.0 minimum
Line, shape, form, value, color, and texture are explored using a variety of three-dimensional materials and applying principles and elements of design. (F, Sp)

ARTS 131 Drawing I 3
Prerequisite: ARTS 102 2.0 minimum or IMAG 112 2.0 minimum or Concurrently
An introductory studio course using a variety of drawing media and methods that introduces both realism and abstraction. Fundamental elements of drawing, concepts of perception, and exploring properties of various media are stressed. Basic principles of one- and two-point perspective are covered. (F, Sp, Su)

ARTS 132 Life Drawing 3
Prerequisite: ARTS 131 2.0 minimum
Basic concepts, approaches, and techniques involving drawing the human figure, using materials such as pencil, ink, charcoal, and conte crayon. (F, Sp, Su)

ARTS 133 Surface Anatomy for Artists 2
Prerequisite: ARTS 131 2.0 minimum
This course is designed specifically for the visual artist. Emphasis will be on identifying and visually representing the effects that the skeletal and muscular systems and body types have on human surface anatomy. Live models will be used. (F, Sp, Su)
ARTS 136  Figure Sculpture 3
Prerequisite: ARTS 132 2.0 minimum and (ARTS 133 2.0 minimum or Concurrency)
A studio course in the 3-dimensional representation of the human figure. The student will use various modeling tools to sculpt the figure in clay. Projects will include: gestural sketches, anatomical details, and reclining, seated and standing full-figure poses. (F, Sp)

ARTS 137  Perspective Drawing 2
Prerequisite: ARTS 131 2.0 minimum
Further development of the drawing process. This course includes expanded perspective principles and quality of light with an emphasis on visualization. (F, Sp, Su)

ARTS 140  Printmaking I 4
Prerequisite: ARTS 102 2.0 minimum or Concurrency
An introduction to the various printmaking techniques, tools, and vocabulary of the printmaker. Includes etching, collagraph, monoprinting, and linoleum cut. (F, Sp)

ARTS 141  Printmaking II 4
Prerequisite: ARTS 140 2.0 minimum
Students expand on processes and concepts introduced in Printmaking I (ARTS 140). Emphasis refining technical skills and conceptual development. (F, Sp)

ARTS 145  Screen Printing I 4
Prerequisite: ARTS 102 2.0 minimum or Concurrency
An introduction to the basic screen printing process, with an emphasis on registration techniques. Includes constructing a frame and making a phototransparency. (F, Sp)

ARTS 146  Screen Printing II 4
Prerequisite: ARTS 145 2.0 minimum
Screen Printing to print processes and concepts introduced in Screen Printing I (ARTS 145). Includes an in-depth study of photographic processes in combination with paper, cut film, and block-out stencils. (F, Sp)

ARTS 151  Computer Graphics/Illustration 3
Prerequisite: ARTS 131 2.0 minimum
Recommended: Windows 95/98/NT Experience
A beginning course for students interested in creating artistic images using a computer as a tool, building on design and drawing skills. (F, Sp, Su)

ARTS 152  Typography 3
Prerequisite: ARTS 102 2.0 minimum or IMAG 112 2.0 minimum or Concurrency
Use of type in visual communication with an emphasis on creativity. Students will be introduced to the tools, materials, and manual and digital type techniques necessary to professionally use type. (F, Sp, Su)

ARTS 171  Computer Graphics/Photography 3
Prerequisite: ARTS 102 2.0 minimum or IMAG 112 2.0 minimum or Concurrency
Recommended: Imacintosh Experience
An introduction to computer manipulation of photographic images. Resolution, design and color skills are required for enrollment. (F, Sp, Su)

ARTS 173  Computer Graphics/Web Design 2
Prerequisite: ARTS 151 2.0 minimum or ARTS 171 2.0 minimum or Concurrency and CIS 102 2.0 minimum
A course in visual design—the effective visual presentation of ideas for the web from concept to design to structure, production and preparation. Focus on the elements and principles of design as applied to layout, graphics and animation. (F, Sp, Su)

ARTS 175  Electronic Design 3
Prerequisite: ARTS 102 2.0 minimum and (ARTS 162 2.0 minimum or Concurrency)
Recommended: Knowledge of Mac OS and Basic Keyboarding Skills
An introduction to page layout software and object-oriented illustration software programs utilizing the Macintosh computer. Emphasis is on using electronic publishing applications for design. (F, Sp, Su)

ARTS 190  Matting and Framing Techniques 1
Prerequisite: None
An overview of the various materials and techniques for displaying and exhibiting artwork. Students will apply demonstrated techniques to matting and framing their work. (F, Sp)

ARTS 105  Employ/Illus Issues for Artists 1
Prerequisite: None
An introduction to business, legal, and specific marketing issues relevant to visual artists. Students will be introduced to copyrights, contracts, and basic record keeping. The focus is on specific employment goals relevant to artists. (F, Sp)

ARTS 200  Painting I 4
Prerequisite: ARTS 102 2.0 minimum and ARTS 121 2.0 minimum
An introduction to oil and acrylic painting concepts in the Western tradition, ranging from Renaissance to Contemporary. Examines basic materials, tools, techniques, and modes of expression. (F, Sp, Su)

ARTS 201  Painting II 4
Prerequisite: ARTS 200 2.0 minimum
A continuation of Painting I (ARTS 200) emphasizing more advanced techniques and increasingly complex problems in painting. A variety of media, techniques, and approaches is encouraged. (F, Sp, Su)

ARTS 203  Figure Painting 4
Prerequisite: ARTS 102 2.0 minimum and ARTS 122 2.0 minimum
A studio course in the human figure using various media such as oil paint, watercolor, acrylic paint, and pastel. (F, Sp, Su)

ARTS 204  Watercolor I 4
Prerequisite: ARTS 102 2.0 minimum and ARTS 121 2.0 minimum
An introduction to the art of transparent watercolor. Examines paper characteristics, degrees of wetness, brushes, and tools, and various techniques in producing watercolor art works. (F, Sp)

ARTS 205  Watercolor II 4
Prerequisite: ARTS 204 2.0 minimum
A continuation of Watercolor I (ARTS 204) emphasizing more advanced techniques and increasingly complex problems using watercolor. (F, Sp)

ARTS 206  Advanced Watercolor 4
Prerequisite: ARTS 205 2.0 minimum
An opportunity for the advanced student to continue with his or her personal exploration and development of watercolor skills under the guidance of an instructor. (F, Sp)

ARTS 213  Illustration Fundamentals 3
Prerequisite: ARTS 132 2.0 minimum and ARTS 137 2.5 minimum
Illustrative techniques are utilized to prepare working sketches and convert them to finished illustrations. This course includes a variety of contemporary, realistic techniques. Emphasis is placed on sound craftsmanship and solving graphic problems through illustration. (F, Sp)

ARTS 216  Humorous Illustration I 3
Prerequisite: ARTS 131 2.0 minimum or Concurrency
Basic humorous illustration/cartooning foundations are demonstrated. Exercises are given on cartooning heads, animals, objects, and drawing techniques. Graded projects include a cartoon utilizing a drawing technique. Originality and imagination are emphasized. (F, Sp, Su)

ARTS 217  Humorous Illustration II 3
Prerequisite: ARTS 216 2.5 minimum and (ARTS 122 2.0 minimum or Concurrency)
A continuation of Humorous Illustration I designed to expand the student's humorous illustration skills through a variety of black-and-white and color projects. Projects will concentrate on the various commercial applications of humorous illustration. (Sp)

ARTS 221  Airbrush Techniques I 4
Prerequisite: None
Introduction to the operation and techniques of the airbrush in shading and creating textures in both black and white and color. Assignments include using various masking methods and hand techniques. (F, Sp, Su)

ARTS 222  Airbrush Techniques II 4
Prerequisite: ARTS 132 2.0 minimum or Concurrency and ARTS 221 2.0 minimum
A continuation of Airbrush Techniques I (ARTS 221) with an emphasis on more complex airbrushing problems including portrait rendering and painting of non-metallic surfaces. A variety of surfaces will be used including fabric, leather, fingernails, and pastries. (F, Sp, Su)
ARTS 224  Automotive Airbrush Techniques 4
Prerequisite: ARTS 221 2.0 minimum
This course introduces techniques for painting on contoured automotive surfaces. Projects incorporate various masking techniques, handbrush techniques, and specialized paint systems. (F, Sp, Su)

ARTS 227  Humorous Illustration III 3
Prerequisite: ARTS 217 2.5 minimum
A continuation of Humorous Illustration II with an emphasis on development of a personal style. Projects include commercial illustration and self-promotion. (F, Sp, Su)

ARTS 228  Advanced Digital Imaging 3
Prerequisite: ARTS 171 2.5 minimum
An advanced level study in the manipulation and processing of digital photographic images. Emphasis is on professional scanning, manipulation and output of digital images using available software products. Instruction includes preparation of images for prepress (hardcopy) and soft display (Multimedia, CD-ROM and World Wide Web). (F, Sp, Su)

ARTS 231  Comp Graphics/Advanced Illuat 3
Prerequisite: (ARTS 151 2.5 minimum or ARTS 175 2.5 minimum) and ARTS 171 2.5 minimum
Full-color illustration techniques are taught using the computer as a tool. Assignments include stylized drawing techniques and design-oriented composition, with an emphasis on problem solving. (F, Sp, Su)

ARTS 232  Comp Graphics/2-D Animation 4
Prerequisite: (ARTS 216 2.5 minimum or IMAG 111 2.5 minimum) and ARTS 151 2.5 minimum and ARTS 171 2.5 minimum
Create 2-D animations using the computer. Emphasis is on the history, theory, and principles of animation. (F, Sp, Su)

ARTS 233  Comp Graphics/2-D Interactive 4
Prerequisite: ARTS 232 2.5 minimum
A course which uses 2-D animation skills to create interactive presentations and animated Web pages. Emphasis is on basic programming concepts and design. (F, Sp)

ARTS 234  Comp Graphics/3-D Animation I 4
Prerequisite: ARTS 151 2.5 minimum and ARTS 171 2.5 minimum
An introduction to 3-D solid modeling, rendering techniques and animation on a desktop graphics system. Introduction of the principles of designing for video. (F, Sp, Su)

ARTS 235  Comp Graphics/3-D Animation II 3
Prerequisite: ARTS 234 2.5 minimum
A continuation of 3-D Animation I (ARTS 234). Emphasis on creation of more complex models and animations. (F, Sp)

ARTS 236  Computer Graphics/Production 3
Prerequisite: (ARTS 233 2.5 minimum or ARTS 235 2.5 minimum) and (ARTS 228 2.5 minimum or IMAG 205 2.5 minimum)
This course covers analysis, design, and development of a completed electronic project such as a CD, videotape, or WWW publishing. Techniques include recording and editing of two- and three-dimensional graphics, animation, video, audio, and imaging. Students implement theory and practice for designing, producing, and disseminating multimedia at planning pre-production, managing production, and post-production levels. (F, Sp)

ARTS 240  Art for Elementary Teachers 3
Prerequisite: None
Especially for elementary school teachers responsible for the student art experience. Emphasis on developing a greater art appreciation, awareness of art forms, and competency working with a variety of art media. Covers the creative and mental growth of children and their needs in an art situation. (F, Sp, Su)

ARTS 251  Graphic Design I 4
Prerequisite: ARTS 102 2.0 minimum and ARTS 162 2.0 minimum and (ARTS 175 2.0 minimum or Concurrently)
An overview of the designer's role in developing comprehensive designs for clients. Color, paper, and type selection will be emphasized. (F, Sp, Su)

ARTS 252  Graphic Design II 4
Prerequisite: ARTS 251 2.5 minimum (previously ARTS 180)
An overview of publication design and the designer's role in the creative organization of typography, photography, and illustration. Emphasis on editorial concept, format, and design considerations. (F, Sp)

ARTS 253  Graphic Design III 4
Prerequisite: ARTS 252 2.5 minimum (previously ARTS 181) and MICTG 140 2.5 minimum
An advanced collaborative learning course involving corporate image and the design of promotional graphics, both two- and three-dimensional. Utilizes innovative design and media considerations. (F, Sp)

ARTS 257  Computer Prepress/Prot Tech 4
Prerequisite: ARTS 171 2.5 minimum and (ARTS 252 2.5 minimum (previously ARTS 181) or Concurrently)
An overview of digital prepress techniques for computer-generated media, including color separations, trapping, output, and digital file preparation. Instruction includes computer system components, printing terminology and processes. The course emphasis is on professional knowledge and accuracy. (F, Sp, Su)

ARTS 265  The Portfolio 2
Prerequisite: Department Approval
The student will assemble his or her best work under faculty supervision into a cohesive, relevant presentation for the purpose of securing employment in a chosen career area. Includes creative resume, cover letter writing and self-promotion. This course is intended to be a final course in the Art, Design and Multimedia Program. (F, Sp)

ARTS 270  Comp Graphics Indep Study 3
Prerequisite: Department Approval
Individual pursuit of special projects not incorporated in regular class offerings. The student must submit a written application detailing his or her project to receive department approval. (F, Sp, Su)

ARTS 272  Printmaking Independent Study 3
Prerequisite: Department Approval
Individual pursuit of special projects not incorporated in regular class offerings. The student must submit a written application detailing his or her projects to receive department approval. (F, Sp, Su)

ARTS 276  Art Independent Study 3
Prerequisite: Department Approval
Individual pursuit of special projects not incorporated in regular class offerings. The student must submit a written application detailing his or her project to receive department approval. (F, Sp, Su)

ARTS 281  Art Internship 3
Prerequisite: Department Approval
An off-campus field study. Students will gain pre-career experience by working in a studio environment under the supervision of a professional artist/designer. Regularly scheduled progress reports will be given and discussed with supervising faculty member. A minimum of 15 hours per week. (F, Sp, Su)

ARWS - ART SEMINARS AND WORKSHOPS

ARWS 120  Basic Drawing 1
Prerequisite: None
An introductory course using a variety of materials including pencil, charcoal, and ink. For non-majors. (F, Sp, Su)

ARWS 131  Intro to Computer Illustration 1
Prerequisite: None
A condensed hands-on workshop introducing computer graphics utilizing sophisticated, user-friendly, artistic software. Programming skills are not necessary. (F, Sp, Su)

ARWS 132  Introduction to QuarkXpress 1
Prerequisite: None
A condensed hands-on workshop designed to provide the student with a working knowledge of QuarkXpress software utilizing a Macintosh computer. Emphasis is on desktop publishing applications. (F, Sp)

ARWS 133  Introduction to PageMaker 1
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, Su)
ARWS 136 Intro to Adobe Illustrator
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. (Sp)

ARWS 137 Intro to Adobe Photoshop
Prerequisite: None
A condensed, hands-on workshop designed to provide the student with a working knowledge of Adobe Photoshop software. Emphasis is on desktop publishing applications. (F)

ARWS 139 Multi-Media Web Graphics
Prerequisite: None
A hands-on course designed to provide the student with a working knowledge of multi-media and web page design. Emphasis is on web design issues for artistic, creative and/or visual learners using Macintosh computers and a variety of multi-media/web software. (F, Sp, Su)

ARWS 141 Watercolor Workshop
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 142 Watercolor Workshop II
Prerequisite: None
A condensed learning experience designed to advance the student in the variety of effects of transparent watercolor, stressing the fundamentals of design color and value in the composition. (Sp)

ARWS 145 Landscape Painting & Drawing
Prerequisite: None
Emphasis is on the use of color, perspective, and compositional strategies of the landscape. Most sessions spent in the field. All types of media are acceptable. (Su)

ARWS 221 Calligraphy I
Prerequisite: None
Introduces the student to the art of fine writing using italic pens. Emphasis is on hand lettering, surveying different styles and scripts used in early manuscripts, and adaptation to modern use. (F, Sp)

ARWS 224 Cartooning Workshop
Prerequisite: None
Emphasizes simple but imaginative characterizations and dramatic exaggerated action in a variety of media including pencil, fiber-tipped pen, and brush and ink. Previous drawing experience helpful. (F, Sp)

ASTR - ASTRONOMY

ASTR 201 Introductory Astronomy
Prerequisite: Reading Level 5 and Writing Level 4 and Math Level 4
A survey course 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 will be used as a laboratory for undergraduate activities. (F, Sp, Su)

AUTO - AUTOMOTIVE

AUTO 100 Auto Service I
Prerequisite: Reading Level 3 and Writing Level 2 and Math Level 3
This course is designed to provide the student with an extensive orientation to an automotive repair facility while developing tool and equipment usage skills needed to advance in the automotive repair field. (F, Sp, Su)

AUTO 102 Basic Car Care for the Novice
Prerequisite: None
This course is designed for the typical automobile owner who wants to gain a better understanding of the automobile and be able to make some basic repairs. It will encompass an overview of servicing needs and factors related to vehicle safety. Students will be able to inspect their vehicles, make informed decisions on purchasing vehicle products and services, and identify service items the owner might do themselves. (F, Sp)

AUTO 105 Automotive Safety
Prerequisite: Department Approval
This course will provide the student with an overview of safety policies and procedures used in the automotive repair field. (Su)

AUTO 110 Auto Electrical Theory
Prerequisite: AUTO 100.2.0 minimum or Concurrently
This course in basic electricity covers the fundamentals of automobile electricity. Materials covered will include electron theory, circuits and wiring diagrams. The student 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
Prerequisite: AUTO 100.2.0 minimum or Concurrently
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 transaxles, 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 I
Prerequisite: AUTO 110.2.0 minimum or Concurrently
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, 706R4, and the Chrysler A430. (F, Sp)

AUTO 122 Automatic Transmissions II
Prerequisite: AUTO 121.2.0 minimum
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 4T65E, and the Chrysler 604. (F, Sp)

AUTO 130 Automotive Engines
Prerequisite: AUTO 110.2.0 minimum or Concurrently
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, Su)

AUTO 133 Small Engine Repair
Prerequisite: None
This is a basic course that covers the 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 140 Automotive Brakes
Prerequisite: AUTO 110.2.0 minimum or Concurrently
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, Su)

AUTO 141 Non-Structural Repair
Prerequisite: Department Approval
Recommended: Evidence of Mechanical Ability
This course introduces the student to elementary repairs that are completed in the collision repair industry. This allows the student to become familiar with collision repair field environment. (F, Sp, Su)

AUTO 142 Advanced Non-Structural Repair
Prerequisite: AUTO 141.2.0 minimum
This course is for students who are familiar with the auto body repair environment and are ready to begin development of specific marketable repair skills. (F, Sp, Su)

AUTO 143 Auto Body Welding and Cutting
Prerequisite: Department Approval
Recommended: Evidence of Mechanical Ability
This course will present welding procedures that will be the basis of many of the repair techniques in any advanced auto body course. MIG, TIG, oxy-acetylene resistance spot welding and oxy-acetylene plasma arc cutting are included. (F, Sp, Su)

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AUTO 144  Auto Body Structural Repair  5
Prerequisite: AUTO 141 2.0 minimum and AUTO 143 2.0 minimum
This course addresses the repair of the unibody and vehicle frames which often are damaged by major collision forces. The student will learn damage diagnosis and repair techniques including stress relief, heating, welding and corrosion protection (F, Sp, Su).

AUTO 145  Introduction to Refinishing  5
Prerequisite: Department Approval
This course builds on skills developed in AUTO 145. Overall refinishing, spot repairs and color matching with a variety of contemporary color-coat materials will be stressed. (F, Sp, Su)

AUTO 146  Advanced Refinishing  5
Prerequisite: AUTO 145 2.0 minimum
This course builds on skills developed in AUTO 145. Overall refinishing, spot repairs and color matching with a variety of contemporary color-coat materials will be stressed. (F, Sp, Su)

AUTO 147  Collision Repair Estimating  3
Prerequisite: AUTO 142 2.0 minimum and AUTO 144 2.0 minimum and AUTO 146 2.0 minimum
This course prepares the student for analyzing collision damage, determining what parts are needed for repair, calculating labor allowances and figuring the total cost of repair. Collision repair manuals and computer programs will be used as sources of information. (F, Sp, Su)

AUTO 148  Automotive Plastic Repair  3
Prerequisite: AUTO 145 2.0 minimum
This course covers repair techniques and materials for repairing the wide variety of plastic materials used in the manufacturing of current vehicles. Refinishing repaired parts is also included. (F, Sp, Su)

AUTO 150  Auto Steering & Suspension  3
Prerequisite: AUTO 100 2.0 minimum or Concurrently
This course is designed to prepare 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 Heat & Air Conditioning  3
Prerequisite: AUTO 110 2.0 minimum
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 heating and air conditioning systems. Both mechanical and electronic control systems will be studied. (F, Sp, Su)

AUTO 165  General Auto Mechanics  2.5
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 188  Auto Body Repair and Painting  4
Prerequisite: Department Approval
This is a combined course of auto body repair and painting. It provides an opportunity to practice the techniques learned in AUTO 141, 142, 143 and 145. (F, Sp, Su)

AUTO 215  Engine Performance/Tune-Up  5
Prerequisite: AUTO 130 2.0 minimum
This course prepares technicians to enter the auto repair and service industry. Theory and fundamentals of basic engine tune-up procedures will be studied. General engine diagnosis, introduction to computerized engine controls, ignition system diagnosis and repair, carburation and fuel injection, and examination of emission control systems will also be covered. (F, Sp)

AUTO 225  Automotive Computers  5
Prerequisite: AUTO 215 2.0 minimum
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
Prerequisite: AUTO 140 2.0 minimum and AUTO 225 2.0 minimum
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, Teves, 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
Prerequisite: AUTO 225 2.0 minimum
This advanced course in automotive computer systems diagnosis is designed to prepare the student to enter the auto repair and 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 260  Intro to Alternative Fuels  2
Prerequisite: AUTO 130 2.0 minimum and AUTO 225 2.0 minimum
This course is designed to help prepare the student to enter the auto repair and service industry. The student will study the use of propane, methanol, compressed natural gas (CNG), ethanol, liquefied natural gas, hydrogen and electricity as alternative fuels in cars and light trucks. Safety regulations will be covered. (F, Sp)

AUTO 261  Alternative Fuels - CNG  3
Prerequisite: AUTO 260 2.0 minimum
This course is designed to help prepare the student to enter the auto repair and service industry. It is an intensive study covering the use of compressed natural gas (CNG) on automobiles and light trucks. Theory, application, installation, diagnosis and safety regulations pertaining to the use of CNG will be covered. (F, Sp)

AUTO 262  Alt Fuels-Propane (LP)  2
Prerequisite: AUTO 225 2.0 minimum
This course is an intensive study covering the use of propane as fuel for automobiles and light trucks. Theory, application, installation, diagnosis and safety regulations applicable to LPG vehicles will be covered. (F, Sp)

AUTO 266  Automotive Service Laboratory  6
Prerequisite: Department Approval
This laboratory course is designed to provide work experience and develop trade- sority skills in general and light-line repair. (F, Sp)

AUTO 285  Automotive Internship  6
Prerequisite: Department Approval
Students are able to earn credits while employed as a technician in auto mechanics or auto body. The program coordinator must approve the training station and working conditions. (F, Sp)

AUTO 286  Independent Study/Autoative  1-3
Prerequisite: Department Approval
Special research projects and/or individual readings are used to apply personal and professional experience to the academic area of interest. A minimum of 40 hours of work is required per credit, and the completion of a written project report. This course cannot be audited. (Su)

AVAF - AVIATION AIRFRAME MAINTENANCE

AVAF 125  Aircraft Systems I  2
Prerequisite: Department Approval
The study of fuel management, transfer, defueling and fuel pump systems. The course covers the procedures used to inspect, check, service, troubleshoot and repair aircraft fuel systems and fuel system components. Course material emphasizes fluid quantity indicating, fluid pressure and warning systems. (Sp)

AVAF 125  Aircraft Systems II  6
Prerequisite: Department Approval
The study, analysis and repair of aircraft landing gear and brake systems and their related warning systems. Includes the study, inspection, servicing and repair of aircraft hydraulic and pneumatic systems and their related components. (Sp)

AVAF 127  Aircraft Systems III  3
Prerequisite: Department Approval
Course covers the inspection, checking, troubleshooting, servicing and repair of aircraft heating, cooling, air-conditioning, pressurization, oxygen, ice and rain control and fire protection systems. (Su)
AVAF 130 Avionics Airframe Applications
Prerequisite: Department Approval
This course covers airframe related subjects necessary for an avionics technician. Topics include aircraft structure principles, installation procedures, material and fastener identification and airframe installation procedures. Students will work with sheet metal and composite structures. (F)

AVAF 134 Aircraft Instruments
Prerequisite: Department Approval
Course covers inspection, checking, servicing, troubleshooting, repair of electronic flight instrument systems, both mechanical and electrical speed, altitude, temperature, pressure and flow instrument systems. Also, special removal and installation techniques applicable to aircraft instruments is included. (Su)

AVAF 208 Aircraft Structures I
Prerequisite: Department Approval
This course introduces the procedures for identification, inspection, testing and repairing of wood, fabric-covered and sheet metal aircraft. The installation and removal of conventional rivets, forming of aircraft sheet metal, installation of special rivets and fasteners, and an introduction to applying finishing materials will also be covered. (Sp)

AVAF 209 Aircraft Structures II
Prerequisite: Department Approval
Covers assembly and rigging of fixed wing and rotary wing aircraft control structures. Provides practical application in removal, installation and adjustment of flight controls by balancing, cable tension and motion studies. Aircraft inspection procedures to insure conformity with flight safety standards will be included. (F)

AVAF 210 Aircraft Structures III
Prerequisite: Department Approval
An advanced course covering inspection, repair, layout, bending and assembly of aircraft sheet metal. Inspection, testing, repair, replacement of gages, plastics, honeycomb, composite and laminated structures are practiced. Installation and removal of special fasteners for bonded and composite structures and servicing of aircraft windows, doors and interior furnishings is included. (F, Sp)

AVAF 211 Aircraft Electrical I
Prerequisite: Department Approval
An intermediate aviation electrical course concentrating on theory, calculation and measurement of A.C. electrical systems. Includes reading and interpreting aircraft electrical circuit diagrams, including those with solid-state devices and logic functions. The installation, checking and servicing of airframe and engine wiring, controls, switches, indicators and protective devices are also covered. (Sp, Su)

AVAF 212 Aircraft Electrical II
Prerequisite: Department Approval
Repair of airframe and engine electrical system components with an emphasis on the inspection, checking, servicing and repair of alternating and direct current systems. General troubleshooting techniques are practiced with special emphasis on A.C. and D.C. electrical systems. (Su)

AVAF 246 National Airframe Cert Proc
Prerequisite: Department Approval
Study of the Federal Aviation Regulations pertaining to national certification as a licensed airframe mechanic. Includes testing in all required areas of study. Has a prerequisite to receiving authorization to take the general and airframe national certification test administered by representatives of the Federal Aviation Administration. (F)

AVEL 100 Aviation Electronics
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 Install/Generator
Prerequisite: ELCT 110 2.0 minimum
Co-requisite Course: AVEL 151
Covers the operational characteristics and operation of basic and specialized test equipment found in the avionics industry. Students will develop reading skills in aircraft wiring diagram and weight and balance calculation. Equipment covered includes multimeters, oscilloscopes, power supplies, multifunction test generators, wattmeters, time domain reflectometers and spectrum analyzers. (Sp)

AVEL 151 Avionics Install/General Lab
Prerequisite: ELCT 110 2.0 minimum
Co-requisite Course: AVEL 150
Subjects covered in AVEL 150 will be put to practical use in this laboratory. The student builds and calibrates his/her own volt-ohm meter. The student will construct aircraft wiring harnesses and complete soldering exercises. Common electronic and specialized avionics test equipment are used in the lab. (Sp)

AVEL 190 Receiver Troubleshooting
Prerequisite: AVEL 151 2.0 minimum and ELCT 112 2.0 minimum
Co-requisite Course: AVEL 191
Familiarization with basic superheterodyne receiver principles and operation using block diagrams and component level theory. Various logical troubleshooting techniques are discussed. (Su)

AVEL 191 Receiver Troubleshooting Lab
Prerequisite: AVEL 151 2.0 minimum and ELCT 112 2.0 minimum
Co-requisite Course: AVEL 190
Familiarization with basic superheterodyne receiver principles and operation. Various logical troubleshooting techniques will be put to practical use in the laboratory. Students construct, align and troubleshoot an AM superheterodyne receiver. (Su)

AVEL 200 Flight Line Testing
Prerequisite: Department Approval
A study of the avionics systems found aboard modern aircraft focusing on the flight line testing of such systems as VHF communications, VHF navigation, ADP, radar, autopilots and others. (F, Su)

AVEL 201 Flight Line Testing Lab
Prerequisite: AVEL 151 2.0 minimum
A practical study of the electronics systems found aboard modern aircraft, focusing on the flight line testing of such systems as VHF communications, VHF navigation, ADP, radar, autopilots and others. (F, Su)

AVEL 220 Avionics Systems I
Prerequisite: AVEL 190 2.0 minimum and AVEL 200 2.0 minimum
Restriction: Avionics Majors
Co-requisite Course: AVEL 221
A study of the communications, navigation and other systems found in modern aircraft focusing on component level repair and testing to manufacturer's specifications. Students will have the opportunity to obtain factory certifications for the repair of various systems. (F)

AVEL 221 Avionics Systems I Lab
Prerequisite: AVEL 201 2.0 minimum
Restriction: Avionics Majors
Co-requisite Course: AVEL 220
A hands-on study of the communications, navigation and other systems found in modern aircraft, focusing on component level repair and testing to manufacturer's specifications. (F)

AVEL 225 Avionics Licensing/Regulations
Prerequisite: ELCT 112 2.0 minimum
Federal Communication Commission rules and regulations are discussed as they pertain to the avionics technician. Elements 1 and 3 of the FCC General Radio telephone Operator's License examination are presented to prepare the student for successful completion of the actual examination. (F)

AVEL 226 FAA Rules/Regs Avionics Techs
Prerequisite: AVEL 130 2.0 minimum
This course covers various Federal Aviation Administration rules and regulations as they pertain to avionics shop operations and the avionics technician. (F)

AVEL 230 Avionics Systems II
Prerequisite: AVEL 190 2.0 minimum and AVEL 200 2.0 minimum
Restriction: Avionics Majors
Co-requisite Course: AVEL 231
A study of navigation, microwave pulse equipment and other systems found in modern aircraft, focusing on component level repair and testing to manufacturer's specifications. Students will have the opportunity to obtain factory certification of the repair of various systems. (Sp)
AVEL 231 Avionics Systems II Lab
Prerequisite: AVEL 201 2.0 minimum
Restriction: Avionics Majors
Co-requisite Course: AVEL 230
A hands-on study of navigation, microwave pulse equipment and other systems found in modern aircraft, focusing on component level repair and testing to manufacturer specifications. (Sp)

AVEL 297 Avionics Internship
Prerequisite: AVEL 151 2.0 minimum
Restriction: Avionics and Avionics Installation Majors
Minimum 168 hours per semester as an aviation electronics intern. Part-time occupational internship in avionics technology. The internships will be at certified repair stations as established by the intern coordinator. (Su)

AVEL 299 Advanced Avionics Laboratory
Prerequisite: AVEL 151 2.0 minimum
Restriction: Avionics and Avionics Installation Majors
Students will further develop troubleshooting and installation skills acquired in other courses. Students will work in an environment close to actual working conditions in most avionics repair stations. (Su)

AVFT - AVIATION FLIGHT TRAINING

AVFT 201 Flight Training I
7.5
Prerequisite: Department Approval
Provides in-flight and ground training in a single-engine, non-complex aircraft culminating in aeronautical knowledge, experience and skill in accordance with the Federal Aviation Administration Private Pilot Practical Test standards. (F, Sp)

AVFT 202 Flight Training II
5
Prerequisite: Department Approval
Provides in-flight and ground training in a single-engine, non-complex airplane, developing the student's instrument, night and cross-country flying skills. (F, Sp, Su)

AVFT 203 Flight Training III
5.5
Prerequisite: Department Approval
Provides instruction in a complex, single-engine airplane, developing the student's skill at IFR navigation and ATC procedures in en route and terminal environments. (F, Sp, Su)

AVFT 204 Flight Training IV
5
Prerequisite: Department Approval
Provides in-flight and ground instruction in a complex airplane, developing student skills in IFR navigation and ATC procedures in en route and terminal environments. Students will develop skills at performing commercial proficiency flight maneuvers. Upon completion of this course, the student will take the practical test for commercial/Instrument pilot airplane. (F, Sp, Su)

AVFT 205 CFI Flight Training
3.5
Prerequisite: Department Approval
Provides in-flight and ground training in common primary training and complex airplanes. The student will develop instructional skills necessary to train pilots for certification in accordance with Federal Aviation Regulations. The student will take his/her practical test for Certified Flight Instructor Airplane upon completion. (F, Sp, Su)

AVFT 206 Flight Inst Instrument Flight
2.5
Prerequisite: Department Approval
Provides in-flight and ground training in a non-complex aircraft. The student will develop instructional skills necessary to train pilots for the instrument rating. The student will take the practical test for the instrument flight instructor rating airplane upon completion of this course. (F, Sp, Su)

AVFT 207 Multi-Engine Flight Training
1.5
Prerequisite: Department Approval
Provides in-flight and ground instruction in a multi-engine airplane. The student will take the multi-engine practical test upon completion of this course. (F, Sp, Su)

AVFT 208 Multi-Engine Instructor Flight
.75
Prerequisite: Department Approval
Provides in-flight and ground instruction in a multi-engine airplane. The student will develop instructional skills necessary to train students for the multi-engine practical test. The student will take the multi-engine instructor practical test upon completion of this course. (F, Sp, Su)

AVGM - AVIATION GENERAL MAINTENANCE

AVGM 111 Aviation General I
4
Prerequisite: Department Approval
This course is designed to develop the skills and knowledge required to weigh an aircraft and record the appropriate data. It involves mathematical and basic physics principles related to aviation, including aerodynamics, theory of flight, aircraft structural design and simple machines. (F, Sp)

AVGM 112 Aviation General II
6
Prerequisite: Department Approval
Introduces the Federal Aviation Regulations involving the mechanic's privileges, limitations and related aviation operations. Includes the selection and use of aviation publications, maintenance forms, records, reports, aircraft drawings, graphs and charts, symbols, blueprints and system schematics. Also focuses on aircraft ground operations and servicing of related aircraft systems. (F, Sp)

AVGM 113 Aviation General III
4
Prerequisite: Department Approval
This initial aviation electrical course offers instruction in basic electrical theory and its aviation application. It includes the calculation and measurement of voltage, current resistance, continuity and power; and the theory, inspection and servicing of aircraft lead-acid and ni-cad batteries; and the construction of a volt-meter. (F, Sp)

AVGM 114 Material and Processes
5
Prerequisite: Department Approval
This course covers identification and selection of the appropriate aviation hardware, hand tools, cleaning materials, fluid lines and non-destructive testing methods. Performance of non-destructive testing, precision measurements, aircraft cleaning and corrosion control, fabrication, installation and testing of fluid lines is included. (F, Sp)

AVGS - AVIATION GROUND SCHOOL

AVGS 101 Private Pilot Ground School
4
Prerequisite: None
Recommended: SDEV 124
This course prepares the student for successful completion of the Federal Aviation Administration private pilot written examination. The student will learn basic aerodynamic theory, principles of aircraft/powersplant operation and performance, Federal Aviation Regulations, air traffic control procedures, meteorology, navigation and flight physiology. (F, Sp, Su)

AVGS 121 Aviation Meteorology
4
Prerequisite: None
Recommended: SDEV 124
This course focuses on the application of meteorological theory to the practical aspects of flight planning. The student will understand basic concepts of weather theory, obtain weather briefings by using a personal computer, interpret convective and international weather charts, forecasts and reports (CAAS) and make appropriate "go/no go" decisions. (Sp)

AVGS 211 Instrument Pilot Ground School
4
Prerequisite: None
Recommended: AVGS 121 and SDEV 124
This course prepares the student for successful completion of the FAA Instrument Rating written examination. The student will learn operation and interpretation of the flight instruments, the use of en route, approach, SID and STAR charts for navigation; air traffic control procedures and meteorology as it applies to the instrument pilot. (F, Sp, Su)

AVGS 321 Commercial Pilot Ground School
4
Prerequisite: None
Recommended: AVGS 121 and SDEV 124
This course prepares the student for the successful completion of the FAA commercial pilot written examination. The student will develop knowledge of aerodynamics, high performance aircraft systems, aircraft performance, Federal Aviation Regulations, navigation and flight planning, and meteorology as it applies to commercial pilots. (F)
AVGS 222 Flight Instruct Ground School
Prerequisite: None
Recommended: AVGS 121
This course will prepare the student for the successful completion of the FAA Fundamentals of Instructing and the Flight Instructor-Airplane and Advanced Ground Instructor written exams. The student will develop a flight training syllabus with lesson plans for use in training pilots. (F)

AVIR - AVIATION INSTRUMENT REPAIR

AVIR 140 Avionics Instruments I
Prerequisite: None
Familiarization with common aircraft instruments to include principles of operation, interpretation of indications, testing, proper handling, repair and calibration. Students will learn the proper use of test equipment and instrument repair procedures. (F)

AVPP - AVIATION POWERPLANT MAINTENANCE

AVPP 185 Preventive Maintenance
Prerequisite: Department Approval
This course covers items described in the Federal Aviation Regulation Part 43, Appendix A titled Preventive Maintenance. These items include the removal and installation of lines, servicing of wheel bearings and cleaning fuel and oil strainers or filter elements. Safety, responsibility and operations of various aircraft systems will be discussed. (F, Sp, Su)

AVPP 241 Reciprocating Engine
Prerequisite: Department Approval
Presents the theory and practices used in the removal, inspection, overhaul, service, repair and installation of reciprocating engines. This course also studies the inspection, service, repair and troubleshooting of reciprocating engine lubrication systems. (F)

AVPP 251 Reciprocating Engine Systems
Prerequisite: Department Approval
This course covers the inspection, servicing, troubleshooting and repair of reciprocating engine cooling and exhaust systems. In addition, the inspection requirements necessary to meet established conformity and standards of airworthiness are studied, and reciprocating engine operations and adjustments are conducted using FAA and maintenance publication procedures. (F, Sp)

AVPP 253 Reciprocating Ignition Systems
Prerequisite: Department 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 System
Prerequisite: Department Approval
Study and analysis of reciprocating engine fuel systems and components. Includes inspection, checking, servicing, troubleshooting and repair of carburetors, water injection systems, heat exchangers, superchargers, intake and induction manifolds and other engine fuel system components. Also includes carburetor overhaul procedures. (F, Sp)

AVPP 257 Aircraft Propeller Systems
Prerequisite: Department Approval
Covers the study, analysis, service and repair of aircraft propellers, systems and controls. Includes propeller synchronizing, ice control, lubrication, balancing, pitch control, repair procedures and removal, and installation of both fixed-pitch and variable-pitch propellers. (F, Sp)

AVPP 259 Turbo Engine I
Prerequisite: Department Approval
Covers the theory of operation and design of the various turbo engine and turbine-driven auxiliary power units. Includes the induction and cooling systems of each. (F, Sp)

AVPP 261 Turbo Engine II
Prerequisite: Department Approval
Covers inspection, checking, servicing, repair, removal, installation and troubleshooting of engines and systems. Detailed study of the lubrication system and inspection procedures to insure conformity with FAA specifications and standards are included. (Sp, Su)

AVPP 263 Turbine Engine Systems
Prerequisite: Department Approval
This course is a detailed study of turbine-engine ignition, pneumatic and electric starters, exhaust and thrust reverser, fire detection and protection, fuel metering and electronic fuel control systems and components. Study also includes inspection, checking, servicing, repair and troubleshooting procedures. (Su)

AVPP 265 Powerplant Instruments
Prerequisite: Department Approval
This course covers the inspection and repair of reciprocating and turboprop engine instruments. Troubleshooting of mechanical/electrical fluid rate-of-flow, temperature, pressure, RPM and airflow indicators will be included. (Sp, Su)

AVPP 267 National Powerplant Cert Proc
Prerequisite: Department Approval
Study of the Federal Aviation Regulations pertaining to national certification as a licensed powerplant mechanic. Includes testing in all required areas of study as a prerequisite to receiving authorization to take the powerplant national certification tests administered by representatives of the Federal Aviation Administration. (Sp)

AVST - AVIATION SIMULATOR TRAINING

AVST 211 Flight Simulator I
Prerequisite: None
Provides flight simulator and ground training to develop student's basic altitude instrument flying skills. Course is intended to be taken concurrently with AVFT 201. Simulator used is GAT-1 (or other approved simulator). (F, Sp, Su)

AVST 212 Flight Simulator II
Prerequisite: None
Provides flight simulator and ground training to develop student's skills in IFR navigation and ATC procedures in en route and terminal environments. This course is intended to be taken concurrently with AVFT 202. Simulator used is GAT-4 (or other approved simulator). (F, Sp, Su)

AVST 213 Flight Simulator III
Prerequisite: None
Provides flight simulator and ground training to further develop student's skills at IFR navigation and ATC procedures in en route and terminal environments. This course is intended to be taken concurrently with AVFT 203. Simulator used is GAT-1 (or other approved simulator). (F, Sp, Su)

AVST 214 Flight Simulator IV
Prerequisite: None
Provides flight simulator and ground training to develop student's skills to the level of instrument rating practical test standards. Students will perform simulated flights in en route and terminal environments, including compliance with emergency procedures. This course is intended to be taken concurrently with AVFT 204. Simulator used is GAT-1 (or other approved simulator). (F, Sp, Su)

AVST 215 Multi-Engine Flight Simulator
Prerequisite: None
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 instructor-multiple-engine simulator. (F, Sp, Su)

BCDS - BUSINESS DEVELOPMENT SEMINARS

BCDS 201 Starting a Business
Prerequisite: None
Entrepreneurs are usually required to wear many "hats" and may have no idea of 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 Pitch to Avd: Open/Operate Bus
Prerequisite: None
This seminar, presented by a successful business person, can save you both problems and money. What to avoid? What to look out for? Where to seek help? Where to cut costs? How to help ensure your chances of a successful business venture? Come and learn from those who can help. (F, Sp, Su)
**BDCS 205 Systems for Record Keeping**

**Prerequisite:** None

This seminar increases the participants' working knowledge of the accounting process and the maintenance of accounting records, ledgers, and income statements, and the preparation for income tax time. (F, Sp, Su)

**BDCS 209 Finan Mgmt for Sm Business**

**Prerequisite:** None

This seminar offers practical presentation, application, and practice of basic financial management techniques, such as analyzing and applying information from balance sheets, income statement, and cash flow statements. (F, Sp, Su)

**BDCS 210 Customer Relations**

**Prerequisite:** None

Anyone who sells, greets, or provides services to customers can discover new ways for creating good customer relations. By communicating effectively, understanding customer personalities and how to deal with them, and assessing their own motivation and esteem needs, participants can serve their customers in a positive manner. (F, Sp, Su)

**BDCS 211 Advertising for Small Business**

**Prerequisite:** None

This seminar will teach you to plan, create, select, and evaluate advertising. Entrepreneurs can learn to develop an advertising plan that is unique to the special needs of their organizations. (F, Sp, Su)

**BDCS 215 Developing a Marketing Plan**

**Prerequisite:** None

This seminar familiarizes participants with marketing and provides an opportunity to write a marketing plan. Participants will learn to use a six-step process that involves obtaining data, developing the plan, and analyzing the results. (F, Sp, Su)

**BDCS 223 Writing a Business Plan**

**Prerequisite:** None

Participants can expect to become familiar with business planning and how to develop and maintain a business plan. Most creditors require a business plan before reviewing a loan application. Be prepared. Write your business plan with the information provided at this seminar. (F, Sp, Su)

**BDCS 230 Small Business Taxes**

**Prerequisite:** None

Federal, state, and local governments assess a variety of taxes on business. This seminar will identify the various taxes which pertain to small businesses in Michigan and provide information on the tax returns used and filing responsibilities of the business. (F, Sp, Su)

### BIOL - BIOLOGY

**BIOL 120 Environmental Science**

**Prerequisite:** Reading Level 5 and Writing Level 6

Students will develop an ecological knowledge base to allow them to understand how human actions impact the environment. They will develop analytical skills through laboratories, fieldwork, simulations, and discussions of contemporary issues. They will investigate and evaluate basic ecological and environmental issues. (F, Sp, Su)

**BIOL 121 Biology for Physiology**

**Prerequisite:** Reading Level 5 and Writing Level 6 and Math Level 4

**Recommended:** Chemistry

This course involves organic molecules, biological molecules, enzymes, metabolism, cell structure and function, passage of materials across membranes, harvesting energy, replication, transcription, and translation. It is recommended for pre-pharmacy students. (F, Sp, Su)

**BIOL 127 Cell Biology**

**Prerequisite:** Reading Level 6 and Writing Level 6 and Math Level 4

**Recommended:** CHEM 120 or CHEM 125 or High School Chemistry

Lecture topics include chemistry of carbohydrates, lipids and proteins, structure and function of prokaryotic and eukaryotic cells, biochemistry of respiration and photosynthesis, and genetics and the regulation of gene expression. Laboratory stresses techniques of cell and molecular biology as well as genetics. (F, Sp, Su)

**BIOL 128 Organismal Biology**

**Prerequisite:** Reading Level 5 and Writing Level 6 and Math Level 4

This course examines adaptations of organisms to changing environments. Major emphasis is on physiological adaptations, natural selection, ethnology, and ecology. Aquatic systems are examined in the laboratory; sampling techniques and statistical methods are used to analyze a local river. (F, Sp, Su)

**BIOL 210 Natural Resource Conservation**

**Prerequisite:** Reading Level 5 and Writing Level 6

This course examines the renewable natural resources and the policies which govern their use in the United States. Laboratory investigations include measurement techniques, land use evaluations, and environmental problem solving. These exercises will be oriented toward the completion of an environmental impact assessment covering a current local environmental situation. (F, Sp, Su)

**BIOL 250 Botany**

**Prerequisite:** Reading Level 5 and Writing Level 6

**Recommended:** One Semester of Biology

An introduction to the study of plants that includes structure and function, development, and ecology. Emphasis will be placed on the diversity, adaptations, and life cycles of major plant groups. Laboratory will complement the basic concepts with emphasis on physiology, systematics, and species of value to medicine and agriculture. (F)

**BIOL 265 Zoology**

**Prerequisite:** Reading Level 5 and Writing Level 6 and Math Level 4

**Recommended:** Biology

Begin with an introduction to heredity, population genetics, the theory of evolution, and ecology. Deals 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)

**BIOL 270 Human Genetics**

**Prerequisite:** Reading Level 5 and Writing Level 6 and Math Level 5

**Recommended:** BIOL 121 or Equivalent

Presents general principles of genetics with specific human applications. Topics include Mendelian genetics, mitosis and meiosis, chromosome structure and aberrations, sex determination and X-linkage, molecular basis of inheritance, gene mutations, genetics of immune system, cancer genes, recombinant DNA technology, and genetic screening and counseling. (Sp)

**BIOL 275 Molecular Biology I**

**Prerequisite:** BIOL 127 2.0 minimum and CHEM 151 2.0 minimum and Reading Level 5 and Writing Level 6 and Math Level 4

Introduces basic concepts of molecular biology, DNA/RNA structure and function, replication, Polymerase Chain Reaction, and recombinant DNA technology. Laboratory emphasizes molecular manipulation, cultivating bacteria, isolating and purifying both bacterial and plasmid DNA, restriction enzyme digest of DNA, and agarose gel electrophoresis analysis of DNA. Field trip to research laboratories. (F)

**BIOL 276 Molecular Biology II**

**Prerequisite:** BIOL 275 2.0 minimum and Reading Level 5 and Writing Level 6 and Math Level 4

Continuation of BIOL 275. Advanced lecture topics in bacteriophage biology, gene analysis, gene sequencing, and applications of molecular biotechnology. Gene cloning experiments with lambda bacteriophage and plasmid vectors. Southern hybridizations, and construction of a genomic library of lambda phage DNA. (Sp)

**BIOL 285 Biology in the Tropics**

**Prerequisite:** Reading Level 5 and Writing Level 6 and Math Level 4

A field experience to study tropical ecosystems in Costa Rica. An eight week lecture series on campus will culminate with a ten day visit to various ecosystems in Costa Rica. Individual projects emphasizing evolutionary and ecological concepts will be conducted in the field. (Sp)

### BLDR - BUILDING RELATED

**BLDR 101 Basic Woodworking**

**Prerequisite:** None

Students learn about wood characteristics, hand and portable power tools, woodworking machinery, joint construction, fastening methods, woodworking techniques and procedures, and technical information to be applied to student-made projects. (F, Sp, Su)
BLDR 110 Wood Projects 1.5
Prerequisite: None
This class is designed to offer students a shop in which to work on individual woodworking projects. All of the tools and equipment in the shop are available for student use. The instructor demonstrates uses of tools/equipment and consults with students on their individual projects. (F, Sp)

BLDR 132 General Home Maintenance 2
Prerequisite: None
This is an introductory course in general home maintenance. Areas to be covered will include basic tools, electrical, plumbing, framing, roofing, interior trim, drywall and painting, appliance maintenance and repair, and concrete flatwork and blocklaying. (F, Sp, Su)

BLDR 144 Build Your Own Home 1.5
Prerequisite: None
This course is designed for students who wish to build their own homes. Included are design considerations, land acquisition, selection of materials, choosing contractors, scheduling of work, financing, and landscaping. Guest speakers, who are experts in their various fields, provide the instruction. (F, Sp, Su)

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BLDR - BUILDING TRADES

BLDR 100 Introduction to Construction 3
Prerequisite: None
This course covers basic concepts of construction, including city and regional planning, managing, contracting, designing, engineering, estimating, bidding, and inspecting. All as well as the production work normally associated with construction. (F)

BLDR 103 Structural Blueprint Reading 4
Prerequisite: None
This course covers symbols, conventions, and abbreviations used in structural blueprints. The student will be able to recognize conventions and verbally describe their interpretation in trade or lay terms according to standard architectural practices. Residential and commercial prints are used to show the relationship between working drawings and specifications. (F, Sp, Su)

BLDR 121 Residential Framing 4
Prerequisite: None
Students will learn to frame residential buildings using accepted framing techniques, such as framing methods, framing floor systems, interior and exterior walls, floors, and doors. Various types of foundations and the advantages and disadvantages of each are covered. Hands-on methods are used. (F, Sp)

BLDR 124 Remodeling, Shingling/Sliding 4
Prerequisite: BLDR 121 1.0 minimum or Concurrently
Students will learn to remodel, tile, and refinish a residential building. This course covers the analysis, designing, estimating, and problem solving, building practices, materials, and installation methods for remodeling, roofing, and exterior wall covering projects. (Sp)

BLDR 126 Interior Carpentry 4
Prerequisite: BLDR 121 1.0 minimum or Concurrently
Students will learn to finish the interior of a residential building. This course covers the materials, installation practices, and material takeoff to do the finish carpentry for a house to include windows, doors, base, chair rail, wood floors, stairs, simple built-in cabinets. (F)

BLDR 202 Builder's Business License 3
Prerequisite: None
This course covers the principles of residential builder organizations and business practices, along with other useful information to help students pass the State of Michigan Builder's License Exam. Preparation for a residential project from planning to actual construction and sale of the project is covered. (Sp)

BLDR 277 Construction Cost Estimating 4
Prerequisite: (BLDR 103 1.0 minimum or ARCH 101 1.0 minimum) or Concurrently
This course covers the material and labor takeoff of 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)

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BUSN - BUSINESS

BUSN 118 Introduction to Business 3
Prerequisite: Reading Level 5
Introduces students to principles, problems, and practices related to the world of business. Topics covered include business management, organization, marketing, finance, economics, production, and international business. (F, Sp, Su)

BUSN 181 Independent Study/Short Course 1–3
Prerequisite: Department Approval
Students are allowed to undertake special research projects and/or individual readings to apply personal and professional experience to academic areas of interest. Minimum of 16 hours work per credit required, plus completion of written project report. (F, Sp, Su)

BUSN 201 International Business 3
Prerequisite: None
Recommended: Busn 118
Overview of international business: organizational, social, cultural, and economic variables that create change in the international marketplace. Includes exchange rates, resource allocation, import quotas and export controls, balance of payments, and free trade versus protectionism. (F, Sp, Su)

BUSN 220 Public Relations 2
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 2
Prerequisite: None
Provides a broad survey of topics including budgeting, smart shopping, buying a car, renting, buying or selling a home, credit requirements, investing, insurance, and estate and retirement planning. Not intended to be a financial planning course, but students will develop a fundamental knowledge of financial concerns. (F, Sp)

BUSN 251 Stock Market Essentials 3
Prerequisite: None
Study of securities market to give framework with which to set investment goals and achieve desired results. Introduction to some of the more prevalent theories, concepts, and skills to aid in developing strategies and making sound investment decisions related to the stock market. (F, Sp)

LANSING COMMUNITY COLLEGE 2000–2001  189
BUSN 254 Introduction to Investments
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
Prerequisite: None
Recommended: 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 295 Small Business Management
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
Prerequisite: None
This series of seminars provides the successful participant with operational proficiency in using specific microcomputer software. The seminars also provide the students with some experience using commands, functions, and features of the software beyond the basic level. Extensive hands-on activity is the primary method used in learning. (F, Sp, Su)

CABS 101 Begin Keyboarding on Computer
Prerequisite: None
This course is designed for students having no previous typing experience. Basic keyboarding skills using the touch method are developed. Emphasis is on correct finger usage, developing speed and accuracy using the alphanumeric keyboard, number and symbol keys. Basic speed level of 20-35 is developed. (F, Sp, Su)

CABS 102 Microcomputers for Non-Majors
Prerequisite: None
Surveys concepts and uses of software applications: word processors, spreadsheets, and database managers. Terminology, problem solving, and acquisition factors associated with personal computers are discussed. Hands-on computer use. (F, Sp, Su)

CABS 104 Skillbuilding for Computers
Prerequisite: None
Recommended: Previous Keyboarding
This course is designed to develop speed and accuracy at the keyboard. Students need to know the alphanumeric key locations prior to taking this class. A net speed of 25 words per minute on a three-minute timing is recommended. (F, Sp)

CABS 110 Microsoft Office
Prerequisite: None
Recommended: Windows 95 and Keyboard Experience
This course provides an introduction to MS Office. It is designed to develop basic operational proficiency while using MS Office (MS Word, MS Excel, MS Access, and MS PowerPoint). Students learn how to use word processing, spreadsheet, database, and presentation software. Topics include creating letters, memos, memos, simple spreadsheets, database structures, and desktop presentations. (F, Sp, Su)

CABS 113 Microsoft Word Office/Int Key
Prerequisite: None
Recommended: Typing Minimum 35 wpm
In addition to building speed and accuracy on the computer, this course is designed to develop a basic word processing skill on the microcomputer using Microsoft Word software for the rapid production, revision, and retrieval of routine business documents such as letters, envelopes, memos, memos, tables, reports, short manuscripts, and repetitive correspondence. (F, Sp, Su)

CABS 118 Adv Microsoft Word for Office
Prerequisite: None
Recommended: CABS 113 or 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, reports, and business publications. (F, Sp)

CABS 119 Word for Windows
Prerequisite: None
Recommended: Windows 95 and Keyboard Experience
This course is designed to provide the person new to the Word for Windows program with the ability to perform 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
Prerequisite: None
Recommended: Windows 95 and Keyboard Experience
Provides instruction in the use of WordPerfect for Windows. Topics include creating, editing, formatting, and storing word processing documents. Also taught are the use of the block technique, spell-checker, thesaurus, merge feature for form letters, and other related skills. (F, Sp, Su)

CABS 126 Excel
Prerequisite: None
Recommended: Windows 95 and Keyboard Experience
Beginner-level training in the creation of spreadsheets and databases using the Microsoft Excel program. The instruction includes the manipulation and generation of reports, tables, and graphs. Also included is instruction in the handling, disk management, and macro creation and use. (F, Sp, Su)

CABS 128 Lotus 1-2-3 for Windows
Prerequisite: None
Recommended: Windows 95 and Keyboard Experience
Provides an introduction to the spreadsheet program Lotus 1-2-3 for Windows. Students develop a working knowledge of the program and the ability to apply Lotus to routine business problems through hands-on activities. Topics include creating, modifying, and enhancing a worksheet: graphing information; using databases; creating macros; and using multiple worksheets. (F, Sp)

CABS 129 Excel - Advanced
Prerequisite: None
Recommended: CABS 126
Advanced-level training in the creation 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 133 Microsoft Access Database
Prerequisite: None
Recommended: Windows 95 and 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 Access. Students learn how to create database structures, enter and edit data, find data, and prepare printed reports. (F)

CABS 180 Desktop Publishing PageMaker
Prerequisite: None
Recommended: Windows 95 and 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)

CABS 182 Microsoft PowerPoint/Windows
Prerequisite: None
Recommended: Windows 95 and Keyboard Experience
Microsoft 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
Prerequisite: None
This course is designed to provide students with a broad base of knowledge that is necessary for enhancing PC productivity through the efficient and effective utilization of Microsoft Windows for life, application, and system, use and management. It serves as an excellent introductory course or comprehensive course that fills in the gaps for intermediate users of the operating system. Topics include the use of Windows Interface Objects, Utilities, Help features, Multimedia features, Internet features, closely related applications, and Apple II (Windows 98). (F, Sp, Su)

CABS 210 Advanced Microsoft Office
Prerequisite: None
Recommended: 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
Prerequisite: None
Recommended: CABS 119
Advanced-level training in word processing using the Microsoft Word program. The instruction includes footnotes, tables, using and defining styles, using graphics, creating forms, and advanced font and text formatting. (F, Sp, Su)

CABS 232 Advanced Microsoft Access
Prerequisite: CABS 133 2.0 minimum
Advanced-level training in the creation of database management using the Microsoft Access Program. The instruction includes the manipulation and generation of reports and queries. (F, Sp)

CABS 234 Programming Microsoft Access
Prerequisite: None
Recommended: CABS 133 and CABS 232 and CIS 119
Advanced level database management for the Access user who already has a knowledge of databases and the basics of an Access database such as tables, queries, forms, and reports, but now wants to learn how to program with Visual Basic for Applications to create applications with a professional and intelligent interface. (F, Sp, S)

CABS 262 Advanced Microsoft PowerPoint
Prerequisite: CABS 182 2.0 minimum
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 choices, importing, applying group/ungroup, and integrating sound and movie clips into Microsoft PowerPoint. (F, Sp, Su)

CHCE = CONTINUING HEALTH CAREERS

CHCE 106 Cardiac Dysrhythmia Interpretation
Prerequisite: None
This course introduces the student to identification of common dysrhythmias on a monitor or telemetry unit. Content will include criteria, causes, hemodynamic effects, and treatment of dysrhythmias according to ACLS guidelines. Use of monitoring equipment is integrated within the course content. (F, Sp, Su)

CHCE 114 Phys Assess Skill for Mrs Practic
Prerequisite: None
This course is designed for nurses in any area of practice. Emphasis is on techniques of physical examination: inspection, palpation, percussion, and auscultation. History taking and interpretation of physical findings are stressed. All major body systems are studied. Live models are used in supervised practice sessions. All equipment supplied. (F, Sp, Su)

CHCE 185 Lab Tests for Nurses
Prerequisite: None
A seminar for nurses and other health care personnel. Seminar content focuses on the systematic disease processes of specific lab tests, interpretation of test values, and application to practice. Mock lab reports and case study situations are used. (F, Sp)

CHCE 205 Intravenous Therapy
Prerequisite: None
This workshop will provide the most recent information on a variety of topics relating to intravenous therapy. Content can range from basic principles to advanced high-tech therapy. The content is designed for professional members of the health care team who routinely deal with IV therapy. (F, Sp)

CHCE 206 Hth Care Pro Impdnt Study
Prerequisite: None
This course is for health care professionals who need to acquire credit in continuing professional education. The individual student will provide specific course content and description. This information is often provided by the specific profession. A instructor will be identified to assist with the learning experience. (F, Sp, Su)

CHCE 210 PALS Training
Prerequisite: None
This seminar is designed for members of the health care team who work with pediatric patients. A combination of lecture and practice in skills stations will prepare the student for success in achieving American Heart Association certification as a Pediatric Advanced Life Support Provider. Prior assigned reading mandatory. (F, Sp)

CHCE 211 PALS Refresher
Prerequisite: None
This seminar is designed to recertify, according to the American Heart Association (AHA) standards, those professionals currently possessing valid Pediatric Advanced Life Support (PALS) certification cards. Upon successful recertification, the AHA will issue each student a new PALS certification card. Prior assigned readings are mandatory. (F, Sp)

CHCE 227 Health Related Seminars
Prerequisite: None
Seminar content is dependent upon course requirement. (F, Sp, Su)

CHCE 230 ACLS Training Seminar
Prerequisite: None
This seminar is designed for members of the health care team to develop knowledge and skills in Advanced Cardiac Life Support (ACLS). A combination of lecture and skills performance will prepare the student to achieve success in American Heart Association certification as an ACLS provider. Pre-requisite mandatory (F, Sp, Su)

CHCE 235 ACLS Refresher
Prerequisite: None
This seminar is designed to recently, according to the American Heart Association standards, those individuals currently possessing valid Advanced Cardiac Life Support (ACLS) cards. The American Heart Association will issue a certificate to each student upon successful completion of the program. Prior assigned readings are mandatory. (F, Sp, Su)

CHCE 266 Focal Problems: Geriatric Ngl
Prerequisite: None
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 273 Reg Nurse Crit Cr Core Curr
Prerequisite: None
A course for registered nurses practicing in critical care, preparing to work in critical care and/or considering taking the certification exam. Emphasis placed on the CCN core course content which includes anatomy and physiology, pathophysiology of selected common conditions, related nursing interventions, and medical management. (F, Sp)

CHCE 287 Health Care Risk Management
Prerequisite: None
This course covers the healthcare system and management functions necessary to control risk and promote quality, the skills necessary to develop and maintain an effective loss prevention and risk financing program in a healthcare setting, healthcare law, the medical malpractice arena, and claims management principles. (Sp)

LANING COMMUNITY COLLEGE 2000–2001 191
CHCE 288 Risk & Gual Mgmt/Health Care Set\nPrerequisite: None\nThis course covers the integration of risk and quality management in an evolving healthcare delivery system; the role of accreditation (JCAHO) and third-party payor (MPHC) bodies in the review of physician practice and patient care, quality and peer review processes, medical staff governance, credentialing, privileging, quality/risks issues in high risk clinical areas, future of risk and quality management, adapting to new technology, delivery models, and customer expectations. (F)\n
CHCE 295 Hlth Cr Risk Mt & Qlty Rv/Sp Is\nPrerequisite: None\nThis seminar will highlight a specially selected issue and examine how that issue impacts health care risk management and quality review. (Su)\n
CHCE 298 Hlth Cr Risk Mgt & Qlty Rv Updt\nPrerequisite: None\nThis 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)\n
CHCE 299 ACLS Instructor Seminar\nPrerequisite: None\nThe 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)\n
CHCV - CHILD DEVELOPMENT\n
CHDV 101 Child Growth/Devol: 0-5 Years\nPrerequisite: Reading Level 5 and Writing Level 4\nThis course examines the growth and development patterns of children (infants to five years) in physical, social, emotional, cognitive, and language development. Basic topics include nutrition, health, play, families, and the preschool experience. Students acquire skills in observing, recording, and interpreting child behavior. (F, Sp, Su)\n
CHDV 111 Child Guidance/Communication\nPrerequisite: Reading Level 3 and Writing Level 4\nThis 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)\n
CHDV 112 Family Relationship/Child Care\nPrerequisite: CHDV 111 2.5 minimum\nThis course examines ways to establish and maintain positive and supportive relationships with families in child care programs. The focus includes understanding the parent's perspective, supporting the child's relationship with his or her family, encouraging parental involvement, and communicating with parents. CDA functional area: families. (F, Sp, Su)\n
CHDV 113 Health/Safety Issues/Child Care\nPrerequisite: None\nThis 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, nutrition, and health and safety education. It addresses the CDA competencies of safe and healthy. (F, Sp)\n
CHDV 120 Curriculum: Physical Dev\nPrerequisite: None\nThis course examines the curriculum and activities which enhance the development of physical and motor skills of children in early childhood programs. It includes specific information on developmentally appropriate activities for fine motor, gross motor, and sensory development for a variety of ages. CDA functional area: physical. Uses seminar format. (F)\n
CHDV 121 Curriculum: Cognitive/Leng\nPrerequisite: None\nThis 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. (Sp)\n
CHDV 130 Introduction to Child Care\nPrerequisite: None\nThis course introduces the 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, Sp, Su)\n
CHDV 131 Family Child Care Management\nPrerequisite: None\nThis course presents a systematic approach to managing a family child care home and creating a positive learning environment for young children in a home setting. Topics include business aspects, program development, professionalism, managing personnel, and organizing the environment. CDA functional areas: learning environment, program management, professionalism. (F)\n
CHDV 184 Children and Stress\nPrerequisite: None\nThis 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)\n
CHDV 185 Preventing Child Sexual Abuse\nPrerequisite: None\nThis course explores preventing child sexual abuse through teaching personal safety to children. Topics include the sexually abusive situation, behavioral indicators, appropriate adult responses, legal mandate, 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)\n
CHDV 186 Child Self-Esteem/Pos Discipl\nPrerequisite: None\nThis course looks at a child'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 teaching positive discipline techniques that build self-esteem. CDA functional area: self, guidance. Seminar format is used. (F, Su)\n
CHDV 188 Caring/Children/Special Needs\nPrerequisite: None\nThis course focuses on the special and diverse individual needs of children and their families, including handicapping conditions in various settings. It addresses identification of children with disabilities or in "at-risk" categories; community services; inclusion in least restrictive environments; family-centered intervention; and communication skills which enhance work with children with special needs and their families in various settings. (Sp)
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<tr>
<th>Code</th>
<th>Title</th>
<th>Description</th>
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<tbody>
<tr>
<td>CHDV 189</td>
<td>Help Children Value Diversity</td>
<td>Prerequisite: None. This course explores various cultural groups and family structures that children encounter. It presents activities that caregivers can use to aid children in recognizing, valuing, and respecting diversity. Development of multi-cultural and anti-bias curriculum is emphasized. Seminar format is used. (F)</td>
</tr>
<tr>
<td>CHDV 190</td>
<td>Child Care Seminars</td>
<td>Prerequisite: None. This course provides a variety of topics of special interest to child care providers. (F, Sp)</td>
</tr>
<tr>
<td>CHDV 220</td>
<td>Preschool Curric/Leaming Env</td>
<td>Prerequisite: CHDV 101 2.0 minimum and CHDV 111 2.5 minimum. This course, with field work, explores developmentally appropriate preschool programming which promotes physical, cognitive, language, and creative development. Emphasis is on active involvement of children in concrete experiences. Other topics include appropriate learning environments, materials and equipment, and children's learning objectives. CDA functional areas: learning environment; creative, physical, cognitive, and communication. (F, Sp)</td>
</tr>
<tr>
<td>CHDV 221</td>
<td>Infant-Toddler Program Dev</td>
<td>Prerequisite: CHDV 101 2.0 minimum or Concurrently. This course, which includes field work, explores physical and emotional environments needed for quality child care for infants and toddlers. Focus includes developing nurturing skills, developmentally appropriate activities and materials, managing schedules and routines, observation, and record keeping skills. CDA functional areas: safe, healthy, learning environment: physical, cognitive, communication; program management. (F, Su)</td>
</tr>
<tr>
<td>CHDV 222</td>
<td>School-Age Child Care Frog Dev</td>
<td>Prerequisite: None. This course examines the development of child care programs to meet the developmental characteristics of school-aged children (age 5-12). Content includes growth and development patterns in the areas of physical, cognitive, social and emotional; appropriate equipment and activities; environment and program structure; and individual and group management. (F, Sp)</td>
</tr>
<tr>
<td>CHDV 239</td>
<td>Child Care Center Admin</td>
<td>Prerequisite: CHDV 220 2.5 minimum. This course examines the administrator's role in directing an early childhood center and in providing a systematic approach to program management. Topics include goal-setting, safety, licensing, nutrition, policy development, business practices, and personnel management. CDA functional areas: safe, program management, professionalism. (Sp)</td>
</tr>
<tr>
<td>CHDV 251</td>
<td>CDA Credentialing Preparation</td>
<td>Prerequisite: CHDV 111 2.5 minimum and (CHDV 220 2.5 minimum or CHDV 221 2.0 minimum) and Department Approval. This course, and accompanying field work, examines credentialing procedures and competency standards for the Child Development Associate (CDA) Credentialing Assessment. Students complete the resource file, are observed using the CDA observation instrument, and prepare for the CDA situational assessment. Content of the course covers the functional area of families and professionalism. (Sp)</td>
</tr>
<tr>
<td>CHDV 252</td>
<td>CDA Completion</td>
<td>Prerequisite: CHDV 112 2.0 minimum and CHDV 220 2.5 minimum and (CHDV 284 2.0 minimum or Concurrently) and Department Approval. This course is designed for associate degree candidates and allows them to complete the CDA assessment readiness requirements as part of the associate degree program. Resource file development, statements of competence, advisor observation, and assessment procedures are included. Taken concurrent with CHDV 284. (F, Sp)</td>
</tr>
<tr>
<td>CHDV 284</td>
<td>Child Development Practicum</td>
<td>Prerequisite: CHDV 220 2.5 minimum and Reading Level 5 and Writing Level 6 and Department Approval. A supervised field experience working directly with children in a child care program. Students gain skill in planning and implementing the daily children's program, and in setting and assessing goals for individual children and the classroom. Accompanying seminar explores the teacher's professional role in planning, goal-setting, and evaluation. (F, Sp)</td>
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**Chemistry Courses**

<table>
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<tr>
<th>Code</th>
<th>Title</th>
<th>Prerequisite</th>
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</thead>
<tbody>
<tr>
<td>CHEM 120</td>
<td>Gen Organic &amp; Biological Chem</td>
<td>Prerequisite: Reading Level 5 and Writing Level 4 and Math Level 4. Introduces topics in general, organic, and biological chemistry that are used in health-related occupations. Includes anionic structural 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)</td>
</tr>
<tr>
<td>CHEM 125</td>
<td>Basic Chemistry</td>
<td>Prerequisite: Reading Level 5 and Writing Level 4 and Math Level 4. Recommended: Chemistry Inventory. Intended for students who have not had high school chemistry or who require a refresher course. Measurement, problem solving, chemical formulas, chemical equations, stoichiometry, atomic structure, bonding, gas laws, solutions, and acids and bases are emphasized. (F, Su, Su)</td>
</tr>
<tr>
<td>CHEM 130</td>
<td>Biochemistry</td>
<td>Prerequisite: Writing Level 4. Recommended: CHEM 120 or CHEM 125 2.0 minimum. This course is designed to provide an understanding of the chemistry of life processes. Topics include organic functional groups, enzymes, carbohydrates, lipids, proteins, metabolic pathways, nucleic acids, biochemical genetics, blood and respiratory chemistry, urine, electrolytes, acid-base balance, hormones, and nutrition. (Sp, Su)</td>
</tr>
<tr>
<td>CHEM 135</td>
<td>Chemistry in Society</td>
<td>Prerequisite: Reading Level 5 and Writing Level 4 and Math Level 4. A general education course which presents chemistry to non-science majors who must function and make decisions in a society shaped by science and technology. Chemistry knowledge is introduced and applied on a need-to-know basis with respect to issues in society that have significant chemical components. (F, Sp)</td>
</tr>
<tr>
<td>CHEM 151</td>
<td>General Chemistry Lecture I</td>
<td>Prerequisite: Reading Level 5 and Writing Level 4 and Math Level 5. Recommended: CHEM 125 2.0 minimum or High School Chemistry. The first of two semester courses designed to provide an in-depth introduction to general chemistry for students who plan careers in the health professions, physical sciences, biological sciences, or engineering. Topics discussed include measurement, aqueous reactions, stoichiometry, thermodynamics, atomic structure, bonding, and acids and bases. (F, Sp, Su)</td>
</tr>
<tr>
<td>CHEM 152</td>
<td>General Chemistry Lecture II</td>
<td>Prerequisite: Math Level 6. Recommended: CHEM 151 and MATH 121 2.0 minimum. The second of two semester courses designed to provide an in-depth introduction to general chemistry for students who plan careers in the health professions, science, or engineering. Topics include kinetics, ionic equilibria, thermodynamics, electrochemistry, descriptive chemistry, and nuclear chemistry. (F, Sp, Su)</td>
</tr>
<tr>
<td>CHEM 161</td>
<td>General Chemistry Lab I</td>
<td>Prerequisite: CHEM 151 2.0 minimum or Concurrently and Reading Level 5 and Writing Level 4 and Math Level 5. Recommended: Students with CHEM 125, consult Department Laboratory courses 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, and water hardness. (F, Sp, Su)</td>
</tr>
<tr>
<td>CHEM 162</td>
<td>General Chemistry Lab II</td>
<td>Prerequisite: None. Recommended: CHEM 161 2.0 minimum and CHEM 152 Concurrently. CHEM 162 is the second semester general chemistry laboratory course. The main focus of the course is inorganic syntheses and analysis. (F, Sp, Su)</td>
</tr>
<tr>
<td>CHEM 182</td>
<td>Introductory Organic Chemistry</td>
<td>Prerequisite: None. Recommended: CHEM 125 3.0 minimum or CHEM 151 2.0 minimum. A survey of the principles of organic chemistry. Introduces the student to structure, nomenclature, chemical and physical properties, selected characteristics, preparations, and reactions of the most common classes of organic compounds. Other topics include polymers, optical isomerism, and selected reaction mechanisms. (Sp)</td>
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**Lansing Community College 2000-2001**
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<thead>
<tr>
<th>Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CHEM 192</td>
<td>Intro Organic Chemistry Lab</td>
<td>1</td>
</tr>
<tr>
<td>Prerequisite: None</td>
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<td></td>
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<tr>
<td>Recommended: CHEM 182 2.0 minimum or Concurrently</td>
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<tr>
<td>Designed for students in majors such as chemical processing, packaging, agriculture, and forestry who require only one credit of organic lab. It gives students an introduction to common techniques, equipment, and chemicals found in an organic laboratory. Particular attention is given to compounds studied in CHEM 182. (Sp)</td>
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<tr>
<td>CHEM 251</td>
<td>Organic Chemistry Lecture I</td>
<td>4</td>
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<tr>
<td>Prerequisite: None</td>
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<tr>
<td>Recommended: CHEM 152 2.0 minimum</td>
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<tr>
<td>The first lecture course of a two-semester sequence in organic chemistry for chemical engineering, chemical technology, chemistry, or preprofessional majors. Topics include structure and bonding, hybridization, nomenclature, stereochemistry, thermodynamics and kinetics of organic reactions, functional groups including reactions and mechanisms, and applications of mass spectrometry. (F, Sp)</td>
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<tr>
<td>CHEM 252</td>
<td>Organic Chemistry Lecture II</td>
<td>4</td>
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<tr>
<td>Prerequisite: None</td>
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<tr>
<td>Recommended: CHEM 251 2.0 minimum</td>
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<tr>
<td>Continuation of CHEM 251. Topics include aromatic compounds, spectroscopy, organometallic compounds, aldehydes and ketones, carboxylic acids and their derivatives, amines, enolates, phenols, carbohydrates, polymers, and proteins. (Sp, Su)</td>
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<tr>
<td>CHEM 262</td>
<td>Quantitative Analysis</td>
<td>2</td>
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<tr>
<td>Prerequisite: CHEM 152 2.0 minimum and CHEM 162 2.0 minimum</td>
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<tr>
<td>Theory and procedures of classical analytical techniques, including gravimetric analysis and titrimetric methods. Use of instruments such as spectrophotometers, pH meters, and others is also included. (F)</td>
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<tr>
<td>CHEM 272</td>
<td>Organic Chemistry Laboratory</td>
<td>2</td>
</tr>
<tr>
<td>Prerequisite: CHEM 251 2.0 minimum</td>
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<tr>
<td>Designed for students in majors such as chemistry, pre-med, and pre-pharmacy who require more than one credit of organic lab. It gives students experience with the chemicals, techniques, and equipment commonly employed in organic laboratories. Particular attention is given to compounds studied in CHEM 251 and 252. (F, Sp)</td>
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<tr>
<td>CHSE</td>
<td>COMMUNITY HEALTH SERVICES</td>
<td></td>
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<tr>
<td>CHSE 101</td>
<td>Acute Care Nurse Assist/Orderly</td>
<td>5</td>
</tr>
<tr>
<td>Prerequisite: Reading Level 3</td>
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<tr>
<td>This course will prepare an individual for employment as a nursing assistant/orderly in a hospital, or other acute care delivery setting. The course will provide the knowledge and skills needed in order to provide safe basic patient care. (F, Sp, Su)</td>
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<tr>
<td>CHSE 108</td>
<td>Long-term Care Nurse Aide</td>
<td>4</td>
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<tr>
<td>Prerequisite: None</td>
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<tr>
<td>This course will prepare an individual to be a nurse aide in a long-term care facility or home health care agency. This state-approved course will provide specific knowledge and skills required for a nurse aide to safely function in a long-term care setting. Upon completion of this course, the student is qualified to take the State Competency Evaluation Nurse Aide Examination. (F, Sp, Su)</td>
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<tr>
<td>CHSE 109</td>
<td>Advanced Acute Care Nr Assist</td>
<td>4.5</td>
</tr>
<tr>
<td>Prerequisite: CHSE 101 2.0 minimum or CHSE 108 2.0 minimum</td>
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<tr>
<td>This course will prepare an individual for employment as an advanced acute care nurse assistant in an acute care hospital, long-term care facilities, 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)</td>
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<tr>
<td>CHSE 121</td>
<td>Medical Term Allied Health I</td>
<td>2.5</td>
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<tr>
<td>Prerequisite: Reading Level 5 and Writing Level 4</td>
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<tr>
<td>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)</td>
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<tr>
<td>CHSE 122</td>
<td>Medical Term Allied Health II</td>
<td>2.5</td>
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<tr>
<td>Prerequisite: CHSE 121 2.5 minimum</td>
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<tr>
<td>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)</td>
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CHSE 235 Pharmacy Technician
Prerequisite: MATH 090 2.0 minimum or Math Level 4
Recommended: AHCC 110 2.5 minimum
This course is designed to introduce students to the skills necessary for a pharmacy technician position in a hospital or retail pharmacy. Students will be prepared to function with knowledge and accuracy in dispensing and control of drugs in either setting. (F)

CISB 101 Intro Computer Info Systems
Prerequisite: None
This course provides an introduction to computers, their role in managing business information systems, their influence on society, and their use in personal productivity. A hands-on introduction to major microcomputer tools, including Windows word processing, spreadsheet, and database management applications. (F, Sp, Su)

CISB 102 Internet Literacy
Prerequisite: None
Recommended: Windows Familiarity
Designed to explore the potential uses of the Internet for business, students will develop hands-on assignments. This includes the use of e-mail, search engines, and others including the Internet applications and development of a web page. The course also discusses the rapidly changing world of the Internet including current software, trends and societal issues. (F, Sp, Su)

CISB 104 Introduction to DOS
Prerequisite: None
Students in this course develop skills in applying the most common commands of the disk operating system (DOS) used by IBM-type microcomputers. Students also learn how to organize disk directories and how to create and work with files. File attributes, pipes, filters, and redirection are also discussed. (F, Sp, Su)

CISB 107 DOS Management
Prerequisite: None
Recommended: CISB 104
Students in this course learn advanced concepts in managing a DOS based operating system. Techniques are introduced for batch files, replaceable parameters, batch programming, memory and configuration files, viruses, and the Windows Registry. (F, Sp, Su)

CISB 114 Programming Logic
Prerequisite: None
An introduction to programming logic which includes an introduction to structured design; programming control structures; arrays; object-oriented programming concepts; file updating; and control break processing. Flowcharts and the Warner-Ort diagram are used for logic diagramming. Coding examples and problems are covered are studied using QBASIC and Visual BASIC. (F, Sp, Su)

CISB 119 Intro Window Prog Visual BASIC
Prerequisite: None
Recommended: MATH 050 or Equivalent
An introduction to concepts of Windows programming using Visual Basic. Students learn to develop business applications by designing and creating a user interfaces and writing the necessary procedures. Students also learn to use logic development tools and object-oriented programming techniques. Topics include user interface design, beginning programming concepts, file and database programming. (F, Sp, Su)

CISB 122 Adv Windows Prog Visual BASIC
Prerequisite: None
Recommended: CISB 119
A second course in the Visual Basic programming sequence. This course presents programming in the Windows environment and leads to the creation of functional Windows application programs. Topics include advanced form design, random access files, development of error handlers, development of keyboard handling, creating class modules, database access and programming, developing help systems, and making Windows: API calls. (F, Sp)

CISB 130 Data Communications
Prerequisite: None
Recommended: CISB 100 and (CISB 114 or CISB 119 or CISB 120)
The course provides a comprehensive introduction to data communications systems: the major components, how they are integrated, and the differences between the various networks and network carriers. Students learn the terminology and major protocols to a level adequate to design application programs and discuss data communication topics with other professionals. (F, Sp, Su)
CISB 180–CISB 280

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CISB 160 Intro to C/C++ Program for Bus 3
Prerequisite: None
Recommended: CISB 190 and (CISB 114 or CISB 120)
Students will use professional development tools to become familiar with the C programming language by designing, implementing, and testing programming projects. Topics include pointers, linked lists, data structures, and dynamic memory allocation. (F, Sp)

CISB 200 Info Sys Tech/Problem Solving 3
Prerequisite: Reading Level 5
Fundamental changes have occurred in organizations with the application of computer technology. This course chronicles the source of that technology in science, explores the limitations of computer technology, examines the impact of the technology in business organizations and society, and develops problem-solving techniques for use in conjunction with computers. Students will work in teams, make group presentations and apply continuous improvement methods. (F, Sp, Su)

CISB 204 Commercial Internet Site Mgmt 3
Prerequisite: None
Recommended: CISB 152 and/or CISB 258
This course introduces concepts of website management. Students will explore website planning, promotion, security, and access control, as well as the legal issues with website management. Students will gain familiarity with various operating platforms and service software. (F, Sp)

CISB 227 Adv Concepts Computer Info Sys .25–4
Prerequisite: Department Approval
With this course, students will learn advanced computer information systems topics as part of a class, an independent study, or a project. Grading criteria and course objectives are determined at the first meeting. (F, Sp, Su)

CISB 230 Intro to Local Area Networks 3
Prerequisite: None
Recommended: CISB 130 and CISB 133
The student in this course learns how to install and maintain a Local Area Network (LAN). Topics start with basic network concepts and terms, then advance students to a point where they can install and maintain a particular network system such as Novell. (F, Sp)

CISB 231 Advanced Local Area Networks 3
Prerequisite: None
Recommended: CISB 230 or Equivalent
The student in this course learns advanced administration techniques for a typical Local Area Network such as Novell NetWare. Topics start with an in-depth review of networking technology, then advance students to a point where they can tune a network to achieve maximum performance. (F, Sp)

CISB 233 Windows NT Server 3
Prerequisite: None
Recommended: CISB 230 or Equivalent
This course provides hands-on training in Microsoft Windows NT Server including setup of the hardware and software for server and client workstations. Students will set up and manage user accounts. Also covered are security management, access rights, permissions, and network devices. (F, Sp, Su)

CISB 234 Linux/UNIX Operating System 3
Prerequisite: None
Recommended: CISB 130 and CISB 133
This course provides hands-on training in the Linux/UNIX operating system. Students will learn to install, use, and administrate a Linux/UNIX operating system including shell programming and user account management. Application software for Linux/UNIX operating systems will also be discussed. (F, Sp)

CISB 235 Microcomputer Hardware Support 3
Prerequisite: None
Recommended: CISB 190 and CISB 130 and CISB 133
This course provides the student with practical, hands-on experience in installing, maintaining, and trouble-shooting microcomputer hardware and software. Topics include CPU, storage devices, add-on boards, video displays, printers, communications devices, software installation, and configuration. (F, Sp)

CISB 236 Microcomputer Software Support 3
Prerequisite: None
Recommended: CABS 105 and CISB 133 and CISB 206
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, tele- phone support, and software training. (F, Sp)

CISB 245 Programming Internship 3
Prerequisite: Department Approval
This internship provides the student with on-the-job experience as a computer programmer. Two hundred hours of experience at a local computer information system's 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
Prerequisite: Department Approval
With this course, students apply what they have learned about programming and systems development. Computer support as a part of an internship, an independent study, or a project. Grading criteria and course objectives are determined at the first meeting. The course requires a minimum of 150 internship hours or 90 independent study hours. (F, Sp, Su)

CISB 250 Database Concepts 3
Prerequisite: None
Recommended: CISB 100 and (CISB 114 or CISB 119 or 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 253 WWW Interactive Programming 4
Prerequisite: None
Recommended: (CISB 119 or Equivalent) and CISB 258
This course provides instruction in programming the World Wide Web (WWW) to make it interactive. The fundamentals and techniques of Common Gateway Interface programming are presented as step-by-step instructions. Students progress to advanced topics to design interactive Web pages. Complete instructions are given on implementing JavaScript, VBScript, C, and Perl. (F, Sp)

CISB 258 Developing Pages for the Web 3
Prerequisite: None
Recommended: CISB 102 or Equivalent
This course explores techniques of web page construction including HTML and the appropriate use of multimedia elements. Students will develop individual websites that progress to include elements such as graphics, sound, video and forms. Students will also demonstrate, as in a team, their understanding and application of the concepts introduced during the semester. (F, Sp, Su)

CISB 260 Systems Analysis and Design 4
Prerequisite: None
Recommended: CISB 130 and (CISB 114 or CISB 119 or 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 270 COBOL II 3
Prerequisite: None
Recommended: CISB 170
An advanced COBOL course covering indexed file creation and updating, sub-program concepts, and writing interactive programs. Copy libraries are used. A system of related programs is compiled as a class project. (F, Sp)

CISB 280 Adv C/C++ Program with QOP 4
Prerequisite: None
Recommended: CISB 180
Students will build on their knowledge of C Programming to become familiar with the C++ programming language and object-oriented programming and design by designing, implementing, and testing programming projects. Encapsulation, inheritance, and polymorphism are explored. (F, Sp)
CISB 281 Visual C++ Programming
Prerequisite: None
Recommended: CISB 122
An introduction to the fundamentals of the modern usage of C++ as a control/fi
CISB 283 Intro to JAVA Programming
Prerequisite: None
Recommended: CISB 102 and (CISB 119 or CISB 122)
This course introduces students to the essential elements of the Java Prog
CIVIL 101 Civil Drafting
Prerequisite: DTDS 100 2.5 minimum or Basic Drafting Test 70%
This course 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
Prerequisite: None
This course consists of fieldwork using surveying equipment and techniques related to construction projects such as cloth tape, drag chain, chaining points, levels, level rods and transits. (F, Su)
CIVIL 120 Surveying
Prerequisite: MATH 114 3.0 minimum or Math Level 4
Introduces basic surveying practices and procedures. The course consists of fi
CIVIL 124 Route Survey
Prerequisite: CIVIL 120 2.5 minimum
This course includes surveying computations in such areas as horizontal curves, vertical curves, spirals and data needed for highway construction layout. Also includes work with surveying computer software and fieldwork with lasers, total stations and data collectors. (F, Sp)
CIVIL 131 Traffic Technology
Prerequisite: None
This course introduces basic principles of traffic engineering design, signing and paving work, 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
Prerequisite: MATH 114 3.0 minimum or Math Level 4
Students will study techniques and equipment used in constructing bridges, buildings, highways and pipelines. Deals with determination of properties of aggregate, 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 are covered. (Sp)
CIVIL 135 Soil Technology
Prerequisite: MATH 114 3.0 minimum or Math Level 4
Explores sampling, testing and evaluating subsurface materials and their effect on construction are covered in this course. Includes an introduction to methods of subsurface drainage, soil classifications and physical properties of soils; and discussion, demonstration and performance with equipment used in density testing. (Sp)
CIVIL 136 Hydrology and Highway Tech
Prerequisite: CIVIL 131 3.0 minimum and (MATH 114 3.0 minimum or Math Level 4)
This course is an introduction to highway inventory, planning, organization, rudi
CIVIL 200 Civil Mathematics
Prerequisite: MATH 114 3.0 minimum or Math Level 4
This course applies differential calculus and integral calculus to practical technical problems. Topics include related rates, maximum and minimum problems and areas under curves. (Sp)
CIVIL 225 Independent Study/Civil
Prerequisite: None
Restriction: Civil Technology Majors
Students are allowed to undertake special research projects to apply to their professional experience and academic major. A minimum of 48 hours of work per credit is required and the completion of a written project report. This course cannot be audited. (Sp)
CIVIL 241 Statics/Strength of Materials
Prerequisite: CIVIL 202 2.5 minimum
Structural terminology and concepts are introduced. General behavior of structural members in compression, stress, strain, creep, fatigue, yield, tension, shear, bending and torsion due to different loading conditions are studied. Loads and forces, conditions of stability and equilibrium in structural frames and free body analysis for reactions and member forces are considered. (Sp)

CJUS 101 Intro to Criminal Justice
Prerequisite: Reading Level 5 and Writing Level 4
A survey course designed to provide students with a current, coordinated, and comprehensive understanding of criminal justice as an institution and as a system. Emphasizes the historical, philosophical, constitutional, and organizational perspectives. (F, Sp, Su)
CJUS 102 Crime Causes and Conditions
Prerequisite: Reading Level 5 and Writing Level 4
Why do some individuals pursue a life of crime? This course introduces and analyzes the past, present, and future of criminology. Sociological, psychological, and biological factors are examined to determine their interaction with and impact on criminal behavior. (F, Sp, Su)
CJUS 103 Criminal Law
Prerequisite: CJUS 101 1.0 minimum or Concurrently
Study of substantive criminal law. Includes classification of crimes, common law concepts, elements of specific crimes, and discussion of current trends in criminal law nationally and locally. (F, Sp, Su)
CJUS 106 Intro to Juvenile Justice
Prerequisite: Reading Level 5 and Writing Level 4
This course is designed so that the legal foundation, as defined by Michigan law, upon which the juvenile justice practitioner must rely in dealing with the juvenile offender and the juvenile victim. In addition, this course will introduce the student to the juvenile offender. (F, Sp, Su)
CJUS 126 Juvenile Offenders/Their Fam
Prerequisite: CJUS 106 1.0 minimum or Concurrently
The course takes an in-depth look at the diverse nature of juvenile offenders and their family backgrounds. Issues impacting juvenile behavior such as gender, gangs, drugs, and disabilities will be discussed. (F, Sp, Su)
CJUS 130 Local Detention
Prerequisite: Reading Level 5 and Writing Level 4
The course explains operations of local detention facilities and their unique role in the criminal justice system. Emphasis is placed on Michigan jail and lockup operations, as well as the organization, management, policy environment, and emerging issues confronting American jails. Differences in jail and prison regarding operations and differing clientele are also covered. (F, Sp)

LANSING COMMUNITY COLLEGE 2000–2001
CJUS 131 Introduction to Corrections 3
Prerequisite: Reading Level 5 and Writing Level 4
Recommended: Math Level 3
Introduction to agencies and processes within the correctional system. An exami-
nation of correctional officer behavior, correctional legislation, the courts, correc-
tional institutions and their operation, and administration. Includes overview of
history sentencing, probation, parole, and community corrections. This course is
required for the corrections officer vocational certificate. (F, Sp)

CJUS 133 Juvenile Residential Services 3
Prerequisite: None
Recommended: CJUS 106 1.0 minimum or Concurrently
All aspects of court placement of juveniles in residential facilities will be examined.
Staffing and operations of both public and private agencies will be discussed,
focusing both on treatment and detention issues. (F, Sp, Su)

CJUS 134 Probation and Parole 3
Prerequisite: (CJUS 101 1.0 minimum or CJUS 131 1.0 minimum) or Concurrently
An introductory level course in probation and parole with strong emphasis on
crimes against the family, parole, and supervision techniques. Students will also
learn the mechanics of writing violation, progress, and pre-sentence reports.
(F, Sp, Su)

CJUS 135 Legal Issues in Corrections 3
Prerequisite: (CJUS 130 1.0 minimum or CJUS 131 1.0 minimum) or Concurrently
Study of current constitutional, federal and state law as it pertains to penal institu-
tions, 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 corrections officer
vocational certificate. (F, Sp, Su)

CJUS 170 Emergency Dispatching I 4
Prerequisite: Reading Level 5 and Writing Level 4
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, ref-
ence sources, emergency plans, history of police/fire/EMS services, and haz-
ardous materials. (F, Sp)

CJUS 171 Emergency Dispatching II 4
Prerequisite: CJUS 170 1.0 minimum or Concurrently
This course has been designed to introduce the student to effective communica-
tion skills, dispatch techniques, first aid and CPR techniques, telephone tech-
niques, real-life scenarios, and emergency medical dispatching. Simulation
exercises are included. (F, Sp)

CJUS 201 Criminal Justice Org/Admin 3
Prerequisite: CJUS 101 1.0 minimum or Concurrently
Examines the primary concepts of criminal justice organization and administration
emphasizing processes and theories, communications, leadership, personnel, bud-
ging, planning, information management, and community relations. (F, Sp, Su)

CJUS 203 Criminal Procedure 3
Prerequisite: CJUS 103 1.0 minimum or Concurrently
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 4
Prerequisite: Reading Level 5 and Writing Level 4
Recommended: CJUS 103 1.0 minimum
Examines the fundamentals of criminal investigation such as crime scene proce-
dures, collection and preservation of physical evidence, interviewing, interroga-
tion, and latent investigation. (F, Sp)

CJUS 205 Policing into the 21st Century 3
Prerequisite: CJUS 101 1.0 minimum
This course is designed to provide the student with an understanding of the phi-
losophy of community policing. As such, the components and processes involved
in the implementation of non-traditional policing methods, as well as the develop-
ment of a partnership between the community and the police, will be examined.
(F, Sp)

CJUS 206 Interview and Interrogation 2
Prerequisite: Reading Level 5 and Writing Level 4
Provides students with the techniques and procedures utilized in conducting lawful,
admissible, and successful investigative interviews and interrogations. (F, Sp, Su)

CJUS 242 Unarmed Defense 3
Prerequisite: None
Hands-on techniques to prepare students to property and effectively handle law
enforcement related physical confrontations. Includes use of force decision-mak-
ing skills, pressure points, control holds, and handcuffing. (F, Sp, Su)

CJUS 245 Report Writing in CJ 2
Prerequisite: (CJUS 101 1.0 minimum or CJUS 131 1.0 minimum) or Concurrently
Designed to meet the needs of criminal justice writing. Components include gram-
mar, punctuation, sentences, paragraphs, styles of writing, and proper document-
tation of work effort. Frequent writing practice. (F, Sp, Su)

CJUS 248 Jail Safety and I.D. Issues 4
Prerequisite: (CJUS 100 1.0 minimum and CJUS 242 1.0 minimum) or
Concurrently and Department Approval
This course introduces students to safety and identification issues in a jail setting.
The course includes hands-on training in fire safety, fingerprinting, first aid and
CPR, and legal defense techniques against spontaneous attacks. (F, Sp, Su)

CJUS 250 Correctional Institutions 3
Prerequisite: CJUS 131 1.0 minimum or Concurrently
Examines the historical development of corrections institutions in the United
States. The organizational structure, purpose, programs, security aspects, and
prisoner due-process rights, as well as the future of institutions, will be examined.
This course is required for the correctional officer vocational certificate. (F, Sp, Su)

CJUS 251 Correctional Clients 3
Prerequisite: (CJUS 126 1.0 minimum or CJUS 131 1.0 minimum) or 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/Criminal Just 3
Prerequisite: (CJUS 101 1.0 minimum or CJUS 130 1.0 minimum or
CJUS 131 1.0 minimum) or Concurrently and Reading Level 5
This course focuses on understanding those aspects of interpersonal relations that
most directly link to attaining of organizational and individual goals in work set-
ings. This course is required for the correctional officer vocational certificate. (F, Sp, Su)

CJUS 256 Interpersonal Comm in Jails 1
Prerequisite: CJUS 130 1.0 minimum and CJUS 255 1.0 minimum and
Department Approval
This course introduces students to the IPC model developed specifically to work
with prisoners. Three basic components of the model will be taught, including the
primary components of sizing up a situation, observing an encounter, and using
application skills to control behavior of prisoner. (F, Sp)

CJUS 260 Criminal Invest & Procedures 3
Prerequisite: None
Co-requisite Courses: CJUS 261 and CJUS 262 and CJUS 263 and
CJUS 264 and CJUS 265 and CJUS 266 and CJUS 267 and
CJUS 268 and PPFT 114
Designed for hands-on, practical instruction in the following areas: crime scene
processing, on-scene preliminary investigator, witness interviewing, suspect
identification, latent prints, photography, child abuse, sexual assault, narcotics,
and preparation for court. (F, Sp, Su)

CJUS 261 Michigan Crim Law & Procedure 3
Prerequisite: None
Co-requisite Courses: CJUS 260 and CJUS 262 and CJUS 263 and CJUS 264
and CJUS 265 and CJUS 266 and CJUS 267 and CJUS 268 and
PPFT 114
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, admis-
sions/confessions, laws of arrest, search and seizure, and suspect identification.
(F, Sp, Su)

CJUS 262 Patrol Procedures and Tactics 3
Prerequisite: None
Co-requisite Courses: CJUS 260 and CJUS 261 and CJUS 262 and CJUS 264
and CJUS 265 and CJUS 266 and CJUS 267 and CJUS 268 and
PPFT 114
The course is designed to identify and utilize proper patrol tactics and proce-
dures necessary for a police officer to function safely and effectively. Topics include:
preparation for patrol, types of patrol, responding to crimes in progress, road-
blocks, civil process, handling abnormal persons, and officer survival. (F, Sp, Su)
CJUS 283 Standard First Aid 2
Prerequisite: None
Co-requisite Courses: CJUS 269 and CJUS 261 and CJUS 252 and CJUS 264 and CJUS 265 and CJUS 266 and CJUS 267 and CJUS 268 and PFFT 114
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 Rprt Writing in Law Enforce 1
Prerequisite: None
Co-requisite Courses: CJUS 280 and CJUS 251 and CJUS 292 and CJUS 253 and CJUS 265 and CJUS 266 and CJUS 267 and CJUS 268 and PFFT 114
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 285 Highway Traffic Operations 3
Prerequisite: None
Co-requisite Courses: CJUS 260 and CJUS 261 and CJUS 262 and CJUS 263 and CJUS 264 and CJUS 265 and CJUS 266 and CJUS 267 and CJUS 268 and PFFT 114
This course is designed to familiarize the student with the proper procedures for traffic control and enforcement. Emphasizes state motor vehicle laws and procedures, arrests and citations, O.U.I.L., and accident investigation. (F, Sp, Su)

CJUS 266 Basic Police Science 3
Prerequisite: None
Co-requisite Courses: CJUS 260 and CJUS 261 and CJUS 262 and CJUS 263 and CJUS 264 and CJUS 265 and CJUS 266 and CJUS 267 and CJUS 268 and PFFT 114
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 Phys Traing 2
Prerequisite: None
Co-requisite Courses: CJUS 269 and CJUS 261 and CJUS 262 and CJUS 263 and CJUS 264 and CJUS 265 and CJUS 266 and CJUS 267 and PFFT 114
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 3
Prerequisite: None
Co-requisite Courses: CJUS 260 and CJUS 261 and CJUS 262 and CJUS 263 and CJUS 264 and CJUS 265 and CJUS 266 and CJUS 267 and PFFT 114
The course is designed to identify and utilize proper driving techniques and procedures using the principles of precision driving. Course involves both classroom and hands-on driving. (F, Sp)

CJUS 281 Directed Independent Study 1–3
Prerequisite: Department Approval
Sixteen hours of study and research are assigned per credit. Students are given criminal justice related research assignments which will introduce them to research procedures and resources. (F, Sp, Su)

CJUS 285 Law Enforcement Internship 2
Prerequisite: Department Approval
Sixteen eight-hour shifts are scheduled with an approved police department. Written reports are required. (F, Sp, Su)

CJUS 266 Juvenile Internship I 3
Prerequisite: CJUS 106 1.0 minimum or Concurrently and Department Approval
The student will be placed in a local program dealing with young people from at risk populations. A classroom component includes preparation for job interviews and other skill-building exercises for working in the juvenile justice field. Written reports are required. (F, Su)

CJUS 287 Juvenile Internship II 3
Prerequisite: (CJUS 123 1.0 minimum or Concurrently) and CJUS 266 1.0 minimum and Department Approval
Recommended: For Juvenile Care Worker Students
The student will be placed in a residential facility with juveniles who have been adjudicated by the court to be detained in a secure environment for treatment and rehabilitation purposes. (F, Sp, Su)

CJUS 288 Corrections Internship 3
Prerequisite: Department Approval
The student will be placed in a local or state corrections facility that will allow him or her to experience many facets of correction operations. Weekly written reports are required and periodic meetings are mandatory. A minimum of 160 hours is required. (F, Sp, Su)

CNCP 101 PC Applications for Technology 3
Prerequisite: None
An introduction to PCs as used in a technical-industrial setting. Students will learn how computer hardware is set up, Windows-NT along with word processing, spreadsheet, computer graphic, and presentation software will be covered. Students will extensively use the Internet to obtain assignments, turn in homework and research projects. (F, Sp, Su)

CNCP 105 Basic Machining Processes 3
Prerequisite: (MATH 114 2.0 minimum or Math Level 4) and Reading Level 4
Recommended: Computer Experience
This course is designed for non-machinist/Computerized Numerical Control (CNC) programming majors who need an introduction to machining processes and systems. Topics covered include conventional machining processes, basic CNC programming and Computer-Aided Manufacturing (CAM) operations. (F, Sp, Su)

CNCP 110 Foundations of CNC Programming 3
Prerequisite: MACH 105 3.0 minimum and (MATH 114 2.0 minimum or Math Level 4) and Reading Level 5 and Writing Level 4
Recommended: Computer Experience
This course lays the foundation for all other Computerized Numerical Control (CNC) courses. Subjects covered include 3-axis cycles, tool diameter compensation, rough and pocketing cycles, macros and sub-routines, and parametric programming with equations. Students will write programs for 3-axis and 5-axis mills and 3-axis lathes. (F, Sp, Su)

CNCP 130 Machine Controls and Setup 4
Prerequisite: CNCP 110 2.0 minimum
Focuses on the set up and operation of a variety of CNC machines ranging from simple 3-axis to sophisticated 5-axis conversational controls. Topics will include proper machine start-up and shut-down, tool data management, fixture alignment and program loading and editing. (F, Sp)

CNCP 194 CNC Project Lab 1–4
Prerequisite: CNCP 130 2.0 minimum
Further skills are pursued involving modern concepts of numerical control of machine tools, including the interrelationship of these new manufacturing methods in the various departments of a company. (F, Sp, Su)

CNCP 200 Unigraphics NC 4
Prerequisite: CNCP 110 2.0 minimum and DTDS 190 2.0 minimum
Unigraphics NC (Numerical Control) is a leader in parametric Computer Aided Manufacturing software used to graphically program CNC machine tools. Course topics will cover preparation of drawings for programming, basic APT programming, Multi-axis programming and 'Overlay' features. Selected programs will be run on CNC machines. (Sp)

CNCP 210 Mastercam 4
Prerequisite: CNCP 110 2.0 minimum
Mastercam is a powerful graphics-based programming software for CNC machine tools. Mastercam software is designed to generate CNC programs from machinist's CAD drawings. Students will use Mastercam to solve CNC programming problems in both 2-D and 3-D environments and run selected programs on CNC equipment. (F, Sp)
CNCP 215 Generative Machining
Prerequisite: CNCP 110 2.0 minimum
Generative Machining (Gen-Mach) is an advanced CNC programming module that is part of the IDEAS engineering design software. Gen-Mach uses IDEAS CAD drawings to geometrically create CNC cutter path programs that are parametrically linked to the CAD model. Students will learn a variety of profile contouring and complex surface machining methods for CNC lathes and mills. (F, Sp)

COOP+ COOPERATIVE EDUCATION

COOP 210 Cooperative Education (Tech)
Prerequisite: Department Approval
Recommended: 2.5 GPA or Greater
Provides technical students with professional and practical work experience in their career field. The student works for a co-op employer as a paid, temporary, part-time employee trained in a planned, structured and supervised work experience. Students apply knowledge and skills learned in academic courses to real-world situations. (F, Sp, Su)

CPSC < COMPUTER SCIENCE

CPSC 126 Introduction to Computers
Prerequisite: Reading Level 3 and Writing Level 4 and Math Level 4
In this survey course, the student learns the application of computers in society, considers their social and economic implications, examines questions of privacy and security, and considers recent advances in computer technology. In addition, the student is exposed to beginning instruction and practice in word processing, spreadsheet and database applications, programming, and user networks. (F, Sp, Su)

CPSC 150 Fortran
Prerequisite: Reading Level 5 and Writing Level 4 and (Math Level 0 or MATH 122 2.0 minimum or MATH 126 2.0 minimum)
Structured programming techniques are applied in the design of algorithms and their implementation in FORTRAN 77. Topics include stepwise refinement outlines, control structures, functions and subroutines, input and output procedures with text files, data types, arrays, and string processing. (F, Sp, Su)

CPSC 230 Algorithms and Computing W/C++
Prerequisite: Reading Level 5 and Writing Level 4 and (MATH 151 2.0 minimum or Concurrently)
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, Sp, Su)

CPSC 231 Computing and Data Structures
Prerequisite: CPSC 230 2.0 minimum and Reading Level 5 and Writing Level 4
Data abstraction and related theory for representation and access of information using C++. Algorithms and abstract data structures such as the stack, queue, binary search tree, heap and priority queue are studied. (F, Su)

CPSC 260 Computer Science Structures
Prerequisite: Reading Level 5 and Writing Level 4 and MATH 151 2.0 minimum and (CPSC 150 2.0 minimum or CPSC 220 2.0 minimum)
Introduction to logical and algebraic structures and techniques required for further study in computer science. Topics include statement logic and proof techniques, relations, functions, directed and undirected graphs and their matrix representations, Boolean algebras and logic networks, regular expressions, finite-state machines, and Turing machines. (Sp)

CPSC 295 Indep Study in Computer Sci
Prerequisite: Department 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 three or more hours per week to this study in addition to their work with the assigned instructor. (F, Sp, Su)

200 LANSING COMMUNITY COLLEGE 2000–2001
CUMA 200 Credit and Collections
Prerequisite: None
This course covers the basic fundamentals of the credit industry. Emphasis on learning the basics of the credit decision and the collection of past due loans. The course is designed for credit union personnel who want to better understand the relevant laws and regulations of credit union credit and collections. (Sp)

CUMA 201 Credit Union Financial Counseling
Prerequisite: None
This course is an overview of financial counseling techniques and skills for credit union employees. Emphasis is placed on skill building and exercises to enable students to develop a basic understanding of financial alternatives available to their customers. (Sp)

CUMA 215 Business Law for Credit Unions
Prerequisite: None
Covers fundamental principles of law applicable to credit union personnel. This course will prepare students to perform the legal responsibilities of their jobs more knowledgeably. Course content includes study of contracts, personal and real property, torts, crimes, and the nature and sources of law as related to credit union operations. (F)

DADH 120 Dental Radiography
Prerequisite: (DAST 111 2.0 minimum and DAST 112 2.0 minimum and DAST 114 2.0 minimum) or (DHYN 110 2.0 minimum and DHYN 112 2.0 minimum and DHYN 114 2.0 minimum)
Co-requisite Courses: Third Semester Dental Hygiene and Dental Assistant Lectures discuss production and emission of dental X-rays, 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
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 Ballet I
Prerequisite: None
This course is designed for the student with no dance experience. Included are basic alignment principles, ballet vocabulary and steps, and elementary combinations of ballet technique for the beginning dance student. Basic barre and center floor combinations will be included. (F, Sp, Su)

DANC 102 Modern Dance I
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 Jazz I
Prerequisite: None
This course is designed for the student with no dance experience. Included are basic alignment, warm-up, and isolations in jazz technique for beginning dance students. Spatial relationships and rhythm are emphasized. (F, Sp)

DANC 104 Tap I
Prerequisite: None
This course is designed for the student with no dance experience. Included are basic tap origins, vocabulary, steps, combinations, and rhythms. Basic alignment training techniques, spatial relationships, and elementary combinations are explored. (F, Sp)
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<td>Modern Dance Repertory</td>
<td>1</td>
<td>Prerequisite: Dance Audition for Modern Dance Repertory</td>
<td></td>
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<tr>
<td>DAN 152</td>
<td>Jazz Repertory</td>
<td>1</td>
<td>Prerequisite: Dance Audition for Jazz Repertory</td>
<td></td>
</tr>
<tr>
<td>DAN 153</td>
<td>Tap Repertory</td>
<td>1</td>
<td>Prerequisite: Dance Audition for Tap Repertory</td>
<td></td>
</tr>
<tr>
<td>DAN 154</td>
<td>Video Dance Repertory</td>
<td>.5</td>
<td>Prerequisite: Department Approval</td>
<td></td>
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</tbody>
</table>

- Prerequisites:
  - None
  - Recommended:
    - DAN 104 or Previous Tap Experience
  - DAN 102.20 minimum
  - Dance Audition
  - DAN 125.20 minimum

- Focus:
  - Musical, artistic, and physical awareness.
  - Tapped rhythms and combinations, which include:
    - Basic alignment, coordination, and rhythmic control.
    - Choreography and stagecraft.
  - Modern dance techniques, spatial relationships, and physical awareness.
  - Emphasis on improvisation, creativity, and artistic expression.

- Recommended:
  - DAN 103 or Previous Jazz Experience

- Credits:
  - Jazz I - Summer: 1 credit
  - Tap I - Summer: 1 credit
  - Ballet I - Summer: 1 credit
  - Modern Dance I - Summer: 1 credit
  - High School Dance Workshop: 3 credits
  - Ballet II: 2 credits
  - Modern Dance II: 2 credits
  - Jazz II: 2 credits
  - Tap II: 2 credits
  - Dance Improvisation: 2 credits
  - Choreography: 3 credits
  - Spanish Dance: 2 credits
  - African Dance: 2 credits
  - Tap Repertoire: 1 credit
  - Modern Dance Repertory: 1 credit
  - Jazz Repertory: 1 credit
  - Tap Repertoire: 1 credit
  - Video Dance Repertory: .5 credit

- Additional Notes:
  - Students are encouraged to take a minimum of 2 credits in Jazz, Tap, or Ballet.
  - DAN 103 or Previous Jazz Experience is recommended for Jazz courses.
  - DAN 104 or Previous Tap Experience is recommended for Tap courses.
  - DAN 102.20 minimum for Jazz and Tap courses.

- Exceptional Opportunities:
  - Opportunities for students to perform in various venues and events.
  - Engagement in community dance programs.
DANC 191  Dance History  3
Prerequisite: None
This course is a dance history overview commencing with the origins of ballet to the present. Important developments and contributors to the field of American dance education will be interwoven with the important developments and contributors of Western dance forms. (F)

DANC 193  Dance Anatomy  3
Prerequisite: DANC 101 2.0 minimum or DANC 102 2.0 minimum or DANC 103 2.0 minimum
This course is an introduction to basic anatomy as it applies to dance. Terminology, practical application, theory of movement, nutrition, and injury prevention and care will be incorporated. Emphasis will be placed on major muscles, muscle groups, and skeletal structure. (Su)

DANC 201  Ballet III  3
Prerequisite: Dance Audition for Ballet III
This course includes a continuation of movement theory, alignment, increased training practices, vocabulary, and longer combinations. Emphasis is placed on center floor transitional techniques, dance dynamics, and development of a personal movement style in preparation for performance. Pointe shoes are optional. (F, Sp, Su)

DANC 202  Modern Dance III  3
Prerequisite: Dance Audition for Modern Dance III
This course includes a continuation of alignment training, spatial relationships, improvisation techniques, movement theory, increased training practices, movement symbols, vocabulary, and longer combinations. Emphasis is placed on center floor transitional techniques, dance dynamics, examination and practice of movement qualities, and development of a personal movement style in preparation for performance. (F, Sp, Su)

DANC 203  Jazz III  3
Prerequisite: Dance Audition for Jazz III
This course includes a continuation of alignment training, movement theory, increased training practices, isolation, and longer combinations. Emphasis is placed on jazz dance dynamics, center floor transitional techniques, and development of a personal movement style in preparation for performance. (F, Sp)

DANC 204  Tap III  3
Prerequisite: Dance Audition for Tap III
This course includes a continuation of tap vocabulary, steps, combinations, and rhythms. Emphasis is placed on increased complexity in rhythms and combinations, and development of a personal movement style in preparation for performance. (F, Sp)

DANC 205  Jazz III - Summer  1.5
Prerequisite: Dance Audition for Jazz III
Emphasis is placed on developing a personal style of movement. Course includes a continuation of alignments, warm-up, and isolations in addition to more complex rhythms and combinations. (Su)

DANC 206  Tap III - Summer  1.5
Prerequisite: Dance Audition for Tap III
Emphasis is placed on increased complexity of rhythms and combinations in order to develop a personal style in preparation for performance. (Su)

DANC 207  Ballet III - Summer  1.5
Prerequisite: Dance Audition for Ballet III
This course includes a continuation of movement theory, alignment, increased training practices, vocabulary, and longer combinations. Emphasis is placed on center floor transitional techniques, dance dynamics and development of a personal movement style in preparation for performance. Pointe shoes are optional. (Su)

DANC 208  Modern Dance III - Summer  1.5
Prerequisite: Dance Audition for Modern Dance III
This course includes a continuation of alignment training, spatial relationships, improvisation techniques, movement theory, increased training practices, movement symbols, vocabulary, and longer combinations. Emphasis is placed on center floor transitional techniques, dance dynamics, examination and practice of movement qualities and development of a personal movement style in preparation for performance. (Su)

DANC 211  Ballet IV  3
Prerequisite: Dance Audition for Ballet IV
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  Modern Dance IV  3
Prerequisite: Dance Audition for Modern Dance IV
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 217  Ballet IV - Summer  1.5
Prerequisite: Department Approval
This course includes a continuation of movement theory, alignment, increased training practices, vocabulary, and longer combinations. Emphasis is placed on dance dynamics and continued development of a personal movement style. Performance skills are sharpened and include: projection, musicality, flow, articulation, clarity of intent, motivation, phrasing, and gesture. (F, Sp, Su)

DANC 218  Modern Dance IV - Summer  1.5
Prerequisite: Department 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. (Sp, Su)

DANC 225  Jazz IV - Summer  1.5
Prerequisite: Dance Audition for Jazz IV
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 I  2
Prerequisite: Dance Audition for Pointe Technique I
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 personal pointe technique exercises to strengthen ankles, calves, legs, and lower back for pointe work. (F, Su)

DANC 255  Directed Studies I  1–3
Prerequisite: Department Approval
Working under the guidance of an approved instructor, the student will pursue studies not otherwise available through scheduled course offerings. (F, Sp)

DAST + DENTAL ASSISTING

DAST 110  Dental Instruments  1
Prerequisite: Admission to Dental Assistant Program
Corequisite Courses: DAST 111 and DAST 112 and DAST 114 and DAST 115 and DAST 118
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  3
Prerequisite: Admission to Dental Assisting Program
Corequisite Courses: DAST 110 and DAST 112 and DAST 114 and DAST 116 and DAST 118
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)
DHYN 110  Preclinical Dental Hygiene
Prerequisite: Admission to Dental Hygienist Program
Co-requisite Courses: DHYN 119 and DHYN 114 and DHYN 116.
Through a lecture and simulated clinical experience, the student is introduced to the clinical practice of dental hygiene: operative preparation, oral examinations and assessment, oral prophylaxis procedures, oral health practices and patient education, and an orientation to the profession. Students will also learn the maintenance of their own oral health. (F)

DHYN 112  Oral Anatomy
Prerequisite: Admission to Dental Hygienist Program
Co-requisite Courses: DHYN 110 and DHYN 114 and DHYN 116
Study of the structures, relationships, and physiologic anatomy of the human oral and maxillofacial region. Special emphasis is placed on the teeth and their supporting structures. (F)

DHYN 114  Oral Pathology
Prerequisite: Admission to Dental Hygienist Program
Co-requisite Courses: DHYN 110 and DHYN 112 and DHYN 116
Study of the diseases affecting oral tissues, including the principles of inflammation and repair, developmental disturbances, caries and resorptions, diseases of the teeth and supporting structures, oral infection, injuries, and neoplasms. (F)

DHYN 116  Dental Pharmacology
Prerequisite: Admission to Dental Hygienist Program
Co-requisite Courses: DHYN 110 and DHYN 112 and DHYN 114
A study of the administration, use, action, and effects of drugs most commonly used by patients and their relationship to dental treatment and dental hygiene procedures. (F)

DHYN 120  Clinical Dental Hygiene I
Prerequisite: DHYN 110 2.0 minimum and DHYN 112 2.0 minimum and DHYN 114 2.0 minimum and DHYN 116 2.0 minimum and EMSU 102
Co-requisite Courses: DADH 128 and DHYN 122 and DHYN 124 and DHYN 126
Initial clinical practice of basic dental hygiene services: recognition and recording of oral conditions, medical history, health education, prophylaxis fluoride treatment, sterilization, radiography, and dental 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
Prerequisite: DHYN 110 2.0 minimum and DHYN 112 2.0 minimum and DHYN 114 2.0 minimum and DHYN 116 2.0 minimum
Co-requisite Courses: DADH 128 and DHYN 120 and DHYN 124 and DHYN 126
Study of anatomy, physiology, and biochemistry 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
Prerequisite: DHYN 110 2.0 minimum and DHYN 112 2.0 minimum and DHYN 114 2.0 minimum and DHYN 116 2.0 minimum and EMSU 102
Co-requisite Courses: DADH 128 and DHYN 120 and DHYN 122 and DHYN 126
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
Prerequisite: DHYN 110 2.0 minimum and DHYN 112 2.0 minimum and DHYN 114 2.0 minimum and DHYN 116 2.0 minimum
Co-requisite Courses: DADH 128 and DHYN 120 and DHYN 122 and DHYN 124
Study of terminology, selection, manipulation, and evaluation of materials used in dentistry. Activities emphasize dental materials and procedures utilized by the dental hygienist. Students are prepared in the knowledge needed to educate patients regarding the benefit of certain restorative procedures for good oral health. (Sp)
DHYN 210 Clinical Dental Hygiene II
Prerequisite: DADM 128 2.0 minimum and DHYN 120 2.0 minimum and DHYN 122 2.0 minimum and DHYN 124 2.0 minimum and DHYN 126 2.0 minimum
Co-requisite Courses: DHYN 212 and DHYN 214 and DHYN 216
A continuation of clinical, perfecting comprehensive treatment planning and advanced prophylaxis techniques: deep scaling, root planing, nutritional counseling, ultrasonic scaling, and the use of chemical therapeutic 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 Proced
Prerequisite: DADM 128 2.0 minimum and DHYN 120 2.0 minimum and DHYN 122 2.0 minimum and DHYN 124 2.0 minimum and DHYN 126 2.0 minimum
Co-requisite Courses: DHYN 210 and DHYN 212 and DHYN 214
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
Prerequisite: DADM 128 2.0 minimum and DHYN 120 2.0 minimum and DHYN 122 2.0 minimum
Co-requisite Courses: DHYN 210 and DHYN 212 and DHYN 214
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 & Educ
Prerequisite: DADM 128 2.0 minimum and DHYN 120 2.0 minimum and DHYN 122 2.0 minimum and DHYN 124 2.0 minimum and DHYN 126 2.0 minimum
Co-requisite Courses: DHYN 210 and DHYN 212 and DHYN 214
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
Prerequisite: DHYN 210 2.0 minimum and DHYN 212 2.0 minimum and DHYN 214 2.0 minimum and DHYN 216 2.0 minimum
Co-requisite Course: DHYN 222
Performing comprehensive dental hygiene care in a timely manner is emphasized. The management and care of difficult patients and persons challenged with physical, mental, social/emotional, and selected medical conditions is presented and coordinated with clinical practice. Employment preparation and legal and professional ethics issues are reviewed. (Sp)

DHYN 222 Community Oral Health
Prerequisite: DHYN 210 2.0 minimum and DHYN 212 2.0 minimum and DHYN 214 2.0 minimum and DHYN 216 2.0 minimum
Co-requisite Course: DHYN 220
Students implement a program plan for a community project utilizing assessment, planning, implementation, and evaluation processes. Dental specialties and the dental hygienist's role in recognizing specialty care needed by patients is presented. Each student participates in a variety of community health projects and observing in dental specialty practices. (Sp)

DHYN 224 Testing Styles and Inventory
Prerequisite: DHYN 210 2.0 minimum and DHYN 212 2.0 minimum and DHYN 214 2.0 minimum and DHYN 216 2.0 minimum
An introduction to dental hygiene licensure exam testing techniques, test construction, and development 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 RDA Procedures - DH
Prerequisite: DADM 128 2.0 minimum and DHYN 120 2.0 minimum and DHYN 126 2.0 minimum
A specially designed course for dental hygiene students wishing to learn auxiliary dental assistant procedures and those intramural functions delegated only to the licensed dental hygienist. Students receive hands-on instruction in RDA procedures. (Sp)

DTS 100 CAD/Drafting Concepts
Prerequisite: None
This course teaches the fundamentals of drafting and design both manually and using computer-aided drafting (CAD). The student will learn the basics of orthographic projection, layout, sketching, dimensioning techniques, computer hardware setup, Windows NT file management, printing and much more. (F, Sp, Su)

DTS 101 Drafting I
Prerequisite: (DTS 100 2.0 minimum or Drafting Placement Test 80%) and Reading Level 3 and Writing Level 2 and 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)

DTS 102 Drafting II
Prerequisite: DTS 101 2.0 minimum
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)

DTS 103 Geometric Tolerancing
Prerequisite: DTS 100 2.0 minimum or Drafting Placement Test 80%
This course covers the principles and methods of dimensioning and tolerancing for specific design requirements on engineering drawings. Uniform practices for stating and interpreting those requirements will be stressed. Content includes use and understanding of the symbolic method of specification relating to tolerances being applied using ASME/ANSI M14.6Y 1994 standards. (F, Sp, Su)

DTS 104 Descriptive Geometry
Prerequisite: DTS 101 2.0 minimum
This course covers the solution of space problems through the practice of advanced orthographic projection. Content includes points, lines and planes, parallelism, perpendicularity, developments, and intersections. Students will complete projects relating to architectural, civil, and industrial engineering situations. (F, Sp)

DTS 110 Industrial Blueprint Reading
Prerequisite: DTS 100 2.0 minimum or Drafting Placement Test 80%
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)

DTS 121 CATIA I
Prerequisite: DTS 101 2.0 minimum
An intermediate level computer aided design (CAD) class for students who have basic board drafting and CAD skills. Instruction covers basic concepts of the CATIA system of CAD. Students will learn 3D wireframe modeling as well as basic solid modeling concepts. Students will construct models of aircraft parts, automotive components and consumer goods. (F, Sp, Su)

DTS 131 AutoCAD Basic 2-D
Prerequisite: DTS 100 2.0 minimum or DTS 101 2.0 minimum or Drafting Placement Test 80%
This course gives an introduction to AutoCAD software. Creation of 2-D multiview mechanical drawings with dimensions and notes will be the main focus. Use of AutoCAD's layer, block, plot commands, and isometric views will also be covered in this course. (F, Sp, Su)

DTS 132 AutoCAD Advanced 3-D
Prerequisite: DTS 131 2.0 minimum
This course builds on the material covered in DTS 131. The student will focus on advanced AutoCAD commands and features, including tools for 3-D drafting and design, 3-D design visualization and program customization. Topics covered include constructing 3-D wireframe and surface modeling, solid modeling, customized toolbars, system variables, and much more. (F, Sp, Su)
DTDS 155 I-DEAS Parts Modeling 4
Prerequisite: DTDS 100 2.5 minimum or DTDS 101 2.5 minimum
This course teaches the student I-DEAS Master Series CAD software emphasizing important concepts of feature-based parametric solid modeling. Students will construct and edit 3-D parts, use drafting and solid modeling features, create sketches and primitives, use feature relationships, use reference geometry, use a 3-D and solid model library of parts, and construct complete 2-D drawings. (F, Sp, Su)

DTDS 156 I-DEAS Assemblies Modeling 4
Prerequisite: DTDS 155 2.5 minimum
Students will learn how to use I-DEAS Master Series Assembly CAD software to create, edit, and constrain feature-based assembly models. Students will then be able to create assembly layout drawings from their solid models. (F, Sp)

DTDS 160 Unigraphics I 4
Prerequisite: DTDS 100 2.0 minimum or DTDS 101 2.0 minimum or Drafting Placement Test 80%
This is the first of a three-semester course sequence that covers the fundamentals of the Unigraphics System of interactive design. This course covers comprehensive CAD concepts of 2-D and 3-D construction and basic solid modeling, as well as some of the concepts of drafting. (F, Sp, Su)

DTDS 181 Unigraphics II 4
Prerequisite: DTDS 180 2.0 minimum and (DTDS 102 2.0 minimum or Concurrently)
This is the second course in a three-semester course sequence. The course covers the construction of solid parts with assemblies and components constructed using primitives, extrusions, and boles 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 4
Prerequisite: DTDS 183 2.0 minimum and DTDS 181 2.0 minimum
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 these components. Advanced concepts of Unigraphics modeling will be discussed and utilized in class projects. (F, Sp, Su)

DTDS 202 Die Design and Construction 4
Prerequisite: DTDS 101 2.0 minimum and (DTDS 131 2.5 minimum or DTDS 181 2.5 minimum or Concurrently)
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 Jigs and Fixture Design 4
Prerequisite: DTDS 101 2.0 minimum and (DTDS 131 2.5 minimum or DTDS 181 2.5 minimum or Concurrently)
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 2
Prerequisite: Department Approval
Gives 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 Mechanical Desktop 4
Prerequisite: DTDS 132 2.0 minimum
This course teaches the student how to generate 3-D parametric models, produce 2-D views, and assemble parts while focusing on AutoDesk Mechanical Desktop's designer and assembly modules. (F, Sp, Su)

DTDS 250 Drafting Project Lab 2-4
Prerequisite: Department Approval
This course is intended to give the advanced drafting and design student an opportunity to practice the skills taught in AutoCAD and drafting classes. Students will complete advanced projects and research in a variety of design applications situations. (F, Sp, Su)

EDUC 201 Teacher Education Practicum 2
Prerequisite: Reading Level 5 and Writing Level 6
Beginning practical experience and training in the field for individual students. The student is placed with an educational institution. (F, Sp)

EDUC 220 Introduction to Education 3
Prerequisite: Reading Level 5 and Writing Level 6
An introduction to education as a teaching profession including an overview of the foundations, philosophy, history, current issues and trends, and organization of education as a human endeavor. (F, Sp, Su)

ELCT 100 Schematic Drawing 1
Prerequisite: None
A nonmathematical beginning course in electronics covering electronic component recognition, reading schematics, freehand and computer drawing of schematic diagrams, and relating schematic diagrams to electronic circuits. (F, Sp, Su)

ELCT 101 Analog Problems 5
Prerequisite: Reading Level 5 and Writing Level 2 and Math Level 4
Recommended: High School Algebra
This course provides circuit analysis problem practice for both DC and AC circuits. Topics include algebraic manipulation and solution of electronic formulas and 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)
ELCT 109 - DC Circuits
Prerequisite: ELCT 101 1.0 minimum or Concurrently
A half-semester beginning DC circuit analysis course covering resistors, power supplies and digital multimeters. Lecture and laboratory topics include Ohm's law, voltage, current, power, series and parallel circuits, Kirchoff network laws, superposition and Thevenin theorems. (F, Sp, Su)

ELCT 110 - AC Circuits
Prerequisite: ELCT 101 1.0 minimum and ELCT 109 1.0 minimum or Concurrently
Recommends: ELCT 109 be taken first half of semester
A half-semester AC circuit analysis course covering complex numbers and trigonometry to analyze series and parallel RCL circuits. AC filter networks and series and parallel resonant circuits are also discussed. AC generator, oscilloscopes and frequency counters are used in laboratory experiments. (F, Sp, Su)

ELCT 112 - Transistors
Prerequisite: ELCT 110 1.0 minimum
A lecture and laboratory course dealing with diode in power supply and regulator circuits, bipolar and field effect transistor biasing and single and multistage amplifier circuits. Circuits are discussed from the analysis, design and troubleshooting standpoint. (F, Sp)

ELCT 120 - Programming Preparation
Prerequisite: None
The student will learn software that provides preparation for machine or high-level language programming. Software used is DOS, Windows, a text editor and a flowcharting program. Emphasis is placed on formulating flowcharts for electronics related problems that can be programmed on a computer. (F, Sp, Su)

ELCT 131 - Digital Basics
Prerequisite: None
Introduces digital electronics microprocessor basics: Binary number system, basic gates, combination and sequential logic circuits, programming of a microprocessor using mnemonics and addressing modes. Laboratory work includes the analysis of digital circuits built on PC boards and the programming, debugging and interfacing of an 8085 microprocessor to several IO devices. (F, Sp, Su)

ELCT 151 - Computer Troubleshooting
Prerequisite: ELCT 171 1.0 minimum or Concurrently
This is a troubleshooting and repair course intended for students in the computer repair certificate and computer technician associate degree programs. Course topics include basic troubleshooting techniques, unit and board swap computer troubleshooting, and computer preventive maintenance. (Sp)

ELCT 160 - Logic Problems Analysis
Prerequisite: None
A fundamental analysis course intended for students in the Computer Repair Certificate Program and the Computer Technician Associate Degree Program. Course topics include manipulation of formulas used in troubleshooting, basic gate operation, truth tables, Boolean algebra, binary, octal and hexadecimal base number systems. (F, Su)

ELCT 161 - Soldering/Desoldering
Prerequisite: None
A basic soldering course. Topics include soldering electronic components to printed circuit boards and surface mount soldering. Desoldering components using solder wick, vacuum desoldering tools and equipment, and printed circuit board repair. Students assemble a digital multimeter as a final course project. (F, Sp, Su)

ELCT 170 - Computer Repair Electronics I
Prerequisite: None
Recommended: ELCT 160 or Algebra
A basic electronics course intended for students in the Computer Repair Certificate Program and the Computer Technician Associate Degree 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
Prerequisite: ELCT 170 1.0 minimum
A digital electronics and computer systems course intended for students in the Computer Repair Certificate Program and the Computer Technician Associate Degree Program. Course topics include semiconductors, magnetic and optical memory, computer system operation, microprocessors, peripheral adapters and microcomputer systems. (Sp)
ELCT 271 Communications I 4
Prerequisite: ELCT 112 1.0 minimum
This course includes a review of resonant circuits, LC filter networks, radio frequency amplifiers, oscillators, amplitude modulation transmission and receiving circuits and systems. (F)

ELCT 272 Communications II 4
Prerequisite: ELCT 271 1.0 minimum
This course will allow students to be placed in hospital biomedical repair shops and earn credit for satisfactory work performance. The students' occupational interests are considered along with their background or related courses to determine placement. (F, Sp, Su)

ELCT 270 Biomedical Internship 2
Prerequisite: Department Approval
This internship will allow the student to gain practical work experience in the communication/electronics field of study. (Sp)

ELCT 291 Communications Internship 2
Prerequisite: Department Approval
This internship will allow the student to gain practical work experience in the communication/electronics field of study. (F)

ELT: ELECTRICAL TECHNOLOGY

ELTE 100 Electrical Safety Practices 1
Prerequisite: None
This course covers basic electrical safety practices in the home, electrical laboratory and in construction and industry. Includes state and federal standards and practices. The course is a prerequisite for, or to be taken concurrently with, all ELTE courses that have a lab. (F, Sp, Su)

ELTE 110 Practical Electricity 3
Prerequisite: ELTE 100 2.0 minimum or Concurrently and Reading Level 3 and Writing Level 2 and Math Level 3
This course introduces the student to electricity on a practical level. The student will learn to use meters to measure electrical quantities, do basic circuit calculations, install basic household electrical wiring and investigate the behavior of motors and transformers. Reviews electrical codes and standards. (F, Sp, Su)

ELTE 112 Basic Wiring Installation 2
Prerequisite: None
Recommended: ELTE 110 2.0 minimum
This course covers installation of a variety of wiring systems in wood frame and masonry construction. Students will practice installing nonmetallic sheathed cable, flexible metal conduit, electrical metallic tubing and rigid conduit. (F, Sp)

ELTE 121 Analyzing Electric Circuits 5
Prerequisite: None
Recommended: ELTE 110 2.0 minimum and (MATH 050 2.0 minimum or Math Level 4)
This course utilizes concepts in basic algebra, vector algebra and trigonometry to solve DC and AC electric circuit problems. Topics will include units, Ohm's law, network analysis, series parallel and combination DC and AC circuits, inductance and capacitance. (F, Sp)

ELTE 122 Industrial Control Electronics 5
Prerequisite: None
Recommended: ELTE 121 2.0 minimum and (NAU 100 2.0 minimum or Math Level 4)
This course introduces the student to solid-state circuitry used in industry. Students will study diodes, transistors, SCRs, triacs, optical isolators, transducers, power circuits, etc. Laboratory will include oscilloscope usage. The course also includes an introduction to Boolean algebra and digital circuits. (Sp)

ELTE 123 Motors and Transformers 4
Prerequisite: None
Recommended: ELTE 121 2.0 minimum
This course covers three-phase circuits, including three-phase power measurement. Contains a practical introduction to single- and three-phase transformers, motors and alternators. Brief coverage of DC machines. (F)

ELTE 131 Intro to Machine Control 4
Prerequisite: None
Recommended: ELTE 110 2.0 minimum
Covers relay logic and controls using industrial standards. Use of correct symbols and standard construction of wiring and ladder diagrams is emphasized. Laboratory exercises include wiring three-phase motor control circuits utilizing two- and three-wire control and machine control circuits utilizing limit and proximity switches, timers, relays, etc. (F, Sp)

ELTE 141 National Electrical Code I 4
Prerequisite: None
Recommended: ELTE 110 2.0 minimum
An introductory course designed for individuals with little or no knowledge of the Electrical Code. Students will study the structure and scope of the National Electrical Code and learn how to locate often used code sections: Ohm's law, voltage drop, wire and conduit sizing and installation methods. (F, Sp)

ELTE 142 National Electrical Code II 4
Prerequisite: None
Recommended: ELTE 141 2.0 minimum
This course is for individuals with field experience and basic electrical training who need a refresher for the State Journey Examination. Students will review the Code with a focus on locating and interpreting the National Electrical Code, in addition to the NEC, State of Michigan electrical rules will be reviewed. (F, Sp)

ELTE 143 National Electrical Code III 4
Prerequisite: None
Recommended: ELTE 141 2.0 minimum or ELTE 142 2.0 minimum
For individuals with a journeyman electrician's license who need to review for the State Master's Exam. Students will cover the Code using the index method, discuss interpretation of the Code, study State of Michigan electrical and construction code rules and discuss topics appropriate to the Electrical Contractors Exam. (F)

ELTE 145 Electrical Prints for Building 4
Prerequisite: None
Recommended: ELTE 120 2.0 minimum or ELTE 141 2.0 minimum
Covers construction prints emphasizing standard and nonstandard symbols and interpretation of prints. Uses the National Electrical Code to calculate branch circuit, feeder, motor circuit and service sizes. Other topics include uninterruptible power supplies, signaling and safety systems. (Sp)

ELTE 147 National Electric Code Changes 1
Prerequisite: None
Covers the changes to the National Electric Code and state codes in the most recent code cycle. (F, Sp, Su)

ELTE 150 Electric Motor Maintenance 2
Prerequisite: None
Recommended: ELTE 110 2.0 minimum
Students learn to diagnose and test electric motors. Students will learn to identify and repair common problems in motors using meters, test equipment and appropriate tools. An introduction to rewinding and metal working procedures is also included. (Sp)

ELTE 222 Industrial Control Design 3
Prerequisite: None
Recommended: ELTE 191 2.0 minimum
This course is a continuation of ELTE 191, covering more components and larger more complex machine control diagrams; including automatic 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)

ELTE 230 Electrical Estimating 3
Prerequisite: None
Recommended: ELTE 122 2.0 minimum and (ELTE 141 2.0 minimum or ELTE 142 2.0 minimum or ELTE 145 2.0 minimum)
Basics of preparing accurate, competitive electrical estimates for the building trades. Topics include take-off procedure using electrical, mechanical and architectural prints; lighting design; labor and materials cost and evaluation techniques and specifications. Students should have wiring experience, practice in the use of NEC rules and electrical prints before enrolling. (F)
ELTE 260 Intro/Programmable Controllers
Prerequisite: None
Recommended: ELTE 131 2.0 minimum
This course covers programmable logic controllers with focus on common operating principles. Topics include the capabilities, similarities and differences among controllers, programming (examine cncf, timers and counters) and connecting external devices to Allen-Bradley, Madison and Omron (F, Sp)

ELTE 261 Allen-Bradley PLC-5 Advanced
Prerequisite: None
Recommended: ELTE 260 2.0 minimum
This course covers programming and connections for Allen-Bradley PLC-5 controllers. Focus on math, subroutine, flare, block transfer, sequencers, logic and bit manipulation instructions. Students will learn logic for machine control, programming and utilizing intelligent cards, ASCII, analog input/output and system documentation. (Sp)

ELTE 291 Project Lab
Prerequisite: ELTE 110 2.0 minimum and Department Approval
A guided study of topics of interest in electrical technology. The student will prepare a summary report of activities and demonstrate results of laboratory experiences. (F, Sp, Su)

EMSA - EMERGENCY MEDICAL SERVICES

EMSA 100 First Aid and CPR
Prerequisite: None
Designed to provide the knowledge and skills necessary to respond to and treat emergency situations until professional medical help is obtained. First aid and CPR certification issued upon successful completion. (F, Sp, Su)

EMSA 150 Basic EMT for Health Prof
Prerequisite: None
This course will prepare the student as an EMT. Lecture material to be covered includes airway management, patient assessment, CPR, soft tissue injuries, head, chest, and abdominal injuries, cardiovascular and respiratory emergencies, Heart attack and stroke, medical emergencies, trauma, diabetes, poisoning, oral communications, triage, emergency childbirth and pediatric emergencies. Practical skills will present the proper use of equipment in the delivery of basic emergency care. Clinics will be included. (F, Sp, Su)

EMSA - EMERGENCY MEDICAL SERVICES SEMINARS

EMSB 101 CPR for Bystanders/Heart Saver
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, prudent heart living, and heart and lungs physiology. (F, Sp, Su)

EMSB 102 CPR for Health Care Prof
Prerequisite: None
This seminar is designed for CPR instruction of health care providers and adheres to American Heart Association guidelines. Content includes one- and two-rescuer CPR, child and pediatric CPR, adult, child, pediatric foreign body airway obstruction, information about heart disease, risk factors, and physiology of the heart and lungs. (F, Sp, Su)

EMSB 103 CPR Recertification
Prerequisite: None
This seminar is designed for CPR instruction for individuals who have previously obtained instruction in the basics of cardiopulmonary resuscitation and foreign body airway obstruction. The participant must have a current provider card or CPR. The curriculum and testing consists of recertification techniques for CPR. (F, Sp, Su)

EMSB 104 CPR Instructor
Prerequisite: None
The CPR instructor's seminar is designed to provide the opportunity and forum to acquire knowledge and skills to accurately instruct and test the Basic Life Support Provider's course according to American Heart Association guidelines. (F, Sp, Su)

EMBS 106 Infant/Child CPR
Prerequisite: None
This seminar provides instruction of CPR for special situations or groups. Infant and child CPR and foreign body airway obstruction for babysitters and parents would fall under this curriculum. (F, Sp, Su)

EMSB 107 First Aid/CPR Semi/Daycare Prof
Prerequisite: None
This seminar is intended for daycare providers to meet the requirements of the Department of Social Services to maintain Daycare Licensure. It will provide eight hours of instruction in basic first aid and infant/child CPR with foreign body airway obstruction. (Sp)

EMBS 110 First Aid and CPR Seminar
Prerequisite: None
This seminar offers adult CPR including foreign body obstruction and four hours of basic first aid. Red Cross certification is given to those successfully completing both components. (F, Sp, Su)

EMTA - EMERGENCY MEDICAL TECHNOLOGY

EMTA 100 Medical First Responder
Prerequisite: None
This course will provide the student with the knowledge and skills necessary to manage ill or injured victims at the scene of an emergency until the arrival of ambulance personnel. Successful completion enables the student to apply for state licensure as a medical first responder. (F, Sp, Su)

EMTA 101 Basic EMT I
Prerequisite: Reading Level 6 and Writing Level 6
Co-requisite Courses: EMTA 102
First in a sequence of five courses to prepare the student as a basic EMT. Emphasis is placed on didactic material including airway management, patient assessment, CPR, soft tissue injuries, head, chest, and abdominal injuries, and proper use of equipment in the delivery of basic emergency care. (F, Sp, Su)

EMTA 102 Basic EMT II
Prerequisite: None
Co-requisite Courses: EMTA 101
Second in a sequence of five courses to prepare the student as a basic EMT. Emphasis is placed on practical skills including patient assessment, bandaging, splinting, backboarding, oxygen delivery equipment, CPR, and airway management in the delivery of basic emergency care. (F, Sp, Su)

EMTA 103 Basic EMT III
Prerequisite: EMTA 101 3.0 minimum and EMTA 102 3.0 minimum
Co-requisite Courses: EMTA 104 and EMTA 112
The third in a sequence of five courses to prepare the student as a basic EMT. Emphasis is placed on didactic material including the recognition and management of environmental and medical emergencies; verbal, written and radio communications; triage, emergency childbirth, and pediatric emergencies. (Sp, Su)

EMTA 104 Basic EMT IV
Prerequisite: EMTA 101 3.0 minimum and EMTA 102 3.0 minimum
Co-requisite Courses: EMTA 103 and EMTA 112
The fourth course in a sequence of five to prepare the student as a basic EMT. Emphasis is placed on the overall delivery of basic emergency care through simulated emergencies. Successful completion of the course and the clinical components enables the student to apply for licensing as a basic EMT. (Sp, Su)

EMTA 105 Ambulance Driving
Prerequisite: Department Approval
A course to provide the EMT with the knowledge and practical experience in the operation of an ambulance. The course will focus on safety, defensive driving techniques, and specialized driving maneuvers. (F, Sp)

EMTA 106 Legal Issues in Emergency Med
Prerequisite: Department Approval
A course to assist the EMT in understanding the legal system and legal principles as they apply to emergency pre-hospital care. Emphasis is placed on the evaluation of legally sound report writing skills, deposition delivery, and legal testimony. (Sp)
EMTA 112
Basic EMT Clinical
Prerequisite: EMTA 101 3.0 minimum and EMTA 102 3.0 minimum
Co-requisite Courses: EMTA 103 and EMTA 104
The fifth course in a sequence of five to prepare the student as a basic EMT.
Includes required OSHA standards, hospital clinicals, ambulance clinicals, and
community service component: teaching accidents/illness prevention and
immediate first aid treatment to community. (F, Sp, Su)

EMTA 114
Rescue/Extrication/Danger Situ
Prerequisite: Department Approval
A course to provide EMS or rescue personnel with skills in light and heavy vehicle
extrication, industrial rescue techniques, extrication from farm machinery, and
other specialized rescue techniques. Emphasis is placed on patient and rescuer
safety. (F, Sp)

EMTA 222
EMS Instructor Coordinator
Prerequisite: Department Approval
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 admin-
istration, MDPH application for course approval, and meeting state requirements.
Student teaching required. (Su)

EMTA 223
Advanced EMS I: Critical Care
Prerequisite: Department Approval
Prepares the student to become a critical care transport specialist and perform
new expanded scope of practice skills. Topics include ventilations, 12-lead ECGs, IV
pumps, pharmacology, invasive lines, and complications of transport. Successful
completion requires passing written and practical exams plus the supervised clin-
icl component. (F)

EMTA 224
Advanced EMS II: Para
Prerequisite: Department Approval
This course will prepare the paramedic to work in a hospital or walk-in clinic envi-
ronment. 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
Prerequisite: Department Approval
An advanced course in EMS designed to provide the skills and understanding nec-
essary for paramedics to safely manage Haz-Mat exposed patients. Key topics
include safety, scene operations, hazard identification, patient assessment, treat-
ment such as specialized pharmacology, and transport. (Sp)

EMTA 226
Emergency Medical Service Mgmt
Prerequisite: Department Approval
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 112
Writing: Literature and Ideas
Prerequisite: WRT 121 2.0 minimum or WRT 101 2.0 minimum or
(Reading Level 5 and Writing Level 6)
An alternative to WRT 122, ENGL 112 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 lit-
erary research paper. (F, Sp, Su)

ENGL 132
Honors Writing: Lit and Ideas
Prerequisite: WRT 121 3.5 minimum or WRT 131 3.5 minimum
An alternative to WRT 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
Prerequisite: WRT 121 2.0 minimum or WRT 131 2.0 minimum or
(Reading Level 5 and Writing Level 6)
Recommended: ENGL 122
An introduction to the content, form, style, and technique of poetry; its structural
types: metrical, blank, and free verse; its thematic types: lyric, narrative, and dra-
matic; and its affects or purposes. The course emphasizes poetry written in
English but includes English translations of representative poetry from other lan-
guages and cultures. (Su)

ENGL 202
Introduction to Drama
Prerequisite: WRT 121 2.0 minimum or WRT 131 2.0 minimum or
(Reading Level 5 and Writing Level 6)
Recommended: ENGL 122
Introduces drama and its literary techniques and conventions. Attention is given to
principles and theory, but understanding of the plays is emphasized. Representative
plays from Greek, European, English, and American dramatists. (Sp)

ENGL 203
Introduction to Prose
Prerequisite: WRT 121 2.0 minimum or WRT 131 2.0 minimum or
(Reading Level 5 and Writing Level 6)
Recommended: ENGL 122
This course introduces students to selected prose genres that have evolved in cul-
tural 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, (autobiogra-
phies, sermons, or documentary). (Sp)

ENGL 211
World Literature I
Prerequisite: WRT 121 2.0 minimum or WRT 131 2.0 minimum or
(Reading Level 5 and Writing Level 6)
A selective survey of the literatures of major world cultures reflecting the diversity of
the continents of Africa, the Americas, Asia, and Europe to approximately the
17th century. Explores the historical, ethnic, aesthetic, political, economic, and the-
monic elements of their respective cultures through narrative prose fiction, poetry,
and drama. (F)

ENGL 212
World Literature II
Prerequisite: WRT 121 2.0 minimum or WRT 131 2.0 minimum or
(Reading Level 5 and Writing Level 6)
A survey of the literatures of major world cultures reflecting the diversity of the con-
tinents of Africa, the Americas, Asia, and Europe from approximately the 17th cen-
tury 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
Prerequisite: WRT 121 2.0 minimum or WRT 131 2.0 minimum or
(Reading Level 5 and Writing Level 6)
Recommended: ENGL 122
ENGL 220 is an introductory course which explores significant issues in science
fiction. Novels and short 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
Prerequisite: WRT 121 2.0 minimum or WRT 131 2.0 minimum or
(Reading Level 5 and Writing Level 6)
Recommended: ENGL 122
This course will introduce film as an art form capable of making perceptive comments
on our civilization. Thematic analysis of 12 to 15 motion pictures of recog-
nized 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
Prerequisite: WRT 121 2.0 minimum or WRT 131 2.0 minimum or
(Reading Level 5 and Writing Level 6)
Recommended: ENGL 122
A study of the popular culture distributed by mass media (newspapers, radio, film,
television, magazines, and music videos) and how the media and popular culture
reflect and shape our cultural beliefs. Extensive use of multimedia. (F)
ENGL 255 American Literature I
Prerequisite: WRIT 121 2.0 minimum or WRIT 131 2.0 minimum or (Reading Level 5 and Writing Level 6)
Recommended: ENGL 122
Provides a perspective on the evolution of traditional American literature beginning with the writings of the first European explorers and Native American oral tradition. Focuses selected essays, autobiographical writings, poems, fiction, and drama from the mid-18th century to 1865, including the work of women and ethnic minorities, which have contributed to American thought. (F, Sp)

ENGL 256 American Literature II
Prerequisite: WRIT 121 2.0 minimum or WRIT 131 2.0 minimum or (Reading Level 5 and Writing Level 6)
Recommended: ENGL 122
Provides a perspective on the further development of traditional American literature from 1865 (the Realism period) to contemporary literature. Features selected essays, autobiographical writings, poems, fiction, and drama from the end of the Civil War to the literature of the late 20th century, including the work of women and ethnic minorities, which have profoundly shaped American literature. (F, Sp)

ENGL 260 African-American Literature
Prerequisite: WRIT 121 2.0 minimum or WRIT 131 2.0 minimum or (Reading Level 5 and Writing Level 6)
Recommended: ENGL 122
This course introduces the African American literary tradition as seen in the literature of the Americas, including the Caribbean. Selections explore the black experience in autobiography, essay, fiction, poetry, and drama. Themes of slavery, colonialism, and the Black Diaspora are discussed. Reading selections include the Harlem Renaissance and contemporary texts. (Sp)

ENGL 265 Japanese Literature
Prerequisite: WRIT 121 2.0 minimum or WRIT 131 2.0 minimum or (Reading Level 5 and Writing Level 6)
Recommended: ENGL 122
Arranged chronologically, this course draws heavily on different genres of Japanese literature. The basis for selection of works to be read rests on the insight that each work gives to the Japanese society which produced it, and upon its universal characteristics. (Sp)

ENGL 266 British Literature I
Prerequisite: WRIT 121 2.0 minimum or WRIT 131 2.0 minimum or (Reading Level 5 and Writing Level 6)
Recommended: ENGL 122
British Literature I surveys the poetry, prose, and drama of the major British writers from Chaucer (14th century) to the Restoration (17th century). The works are selected to reflect the attitudes and values of British culture and the perception of the world from a British point of view. (F)

ENGL 267 British Literature II
Prerequisite: WRIT 121 2.0 minimum or WRIT 131 2.0 minimum or (Reading Level 5 and Writing Level 6)
Recommended: ENGL 122
British Literature II surveys the poetry, prose, and drama of the major British writers from the Romantic (19th century) to the late 20th century. The works are selected to reflect the attitudes and values of British culture and the perception of the world from a British point of view. (Sp)

ENGL 270 Literature by Women
Prerequisite: WRIT 121 2.0 minimum or WRIT 131 2.0 minimum or (Reading Level 5 and Writing Level 6)
Recommended: ENGL 122
A study of selected works by English and North American women writers. Designed to increase understanding of the themes, images, issues, and modes of expression of women writers. (Su)

ENGL 290 Shakespeare
Prerequisite: WRIT 121 2.0 minimum or WRIT 131 2.0 minimum or (Reading Level 5 and Writing Level 6)
Recommended: ENGL 122
Introduces the works of William Shakespeare. Students will read 9 to 12 plays representative of the author's comedies, histories, and tragedies. (F)

ENGL 295 Independent Study
Prerequisite: Department Approval
Special research projects and/or individual readings in English. Students will invest no less than 32 hours for each credit earned. Enrolment 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 098 Success Workshop
Prerequisite: None
Mini-workshops intended to introduce and/or review reading-related techniques essential for academic success and survival. Sessions cover time management, establishing frame of reference, main idea identification, organized study procedures, enhancing comprehension, note-taking, reading, note-taking through "mapping," and keys to improving objective test scores. Includes much practical, hands-on activity. (Sp)

ENRI 105 Life Learning Portfolio
Prerequisite: Reading Level 5 and Writing Level 6 and Department Approval
This course provides the opportunity for students to create a portfolio to document learning acquired through work, volunteer, and/or life employment experiences. 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 152 Workshop: READ Success Skills
Prerequisite: None
Designed for beginning college students, whether recent high school graduates or returning adults. Develops college reading survival skills. Concentrates on reading speed and flexibility, study techniques, concentration and memory, note-taking, test-taking, and vocabulary expansion. (Su)

ENRI 162 Workshop: WRIT Success Skills
Prerequisite: None
This course is designed for new and returning students, as well as others from the community. It helps students to develop writing skills, enhances their understanding of writing as a tool for learning, and includes the study of writing for various disciplines. (Su)

ENVN 121 Environmental Rules and Regs
Prerequisite: Reading Level 5 and Writing Level 4
An overview of federal and state environmental regulations (i.e., 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. (Sp)

ENVN 122 Enviro Sample & Instrumentation
Prerequisite: CHRM 151 2.0 minimum and CHRM 161 2.0 minimum and (Reading Level 5 and Writing Level 4 and Math Level 5)
An introduction to a variety of sampling and monitoring procedures and the instrumentation to accomplish this task. Students will learn how to take samples of ground water, surface water, air, soil, sludge, and waste. Appropriate sampling protocols, records, quality assurance, safety, and documentation are stressed. (F)

ENVN 131 Indust Process & Pollut Preven
Prerequisite: Reading Level 5 and Writing Level 4
A non-technical 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 given with respect to their basic processes, materials flow, worker health and safety, waste reduction, and pollution prevention. (Sp)

ESLP 014 Integrated Skills I
Prerequisite: Placement Test
Designed for high beginning level non-native speakers of English who have basic literacy skills. Emphasizes reading and writing skills building activities designed to prepare students for future academic success. Integrated skills format allows reading, grammar, speaking/listening, and writing activities to be combined using themes. (F, Sp)

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ESLP 015 ESL Writing Skills I
Prerequisite: Placement Test
Designed for high beginning level non-native speakers of English who want to improve their ability to write paragraphs. Students learn simple and progressive verb forms in the present, past and future tenses. A process approach to writing is used and students are introduced to basic word processing skills. (F, Sp)

ESLP 016 ESL Writing Skills II
Prerequisite: ESLP 015 2.0 minimum or Placement Test
Low intermediate level integrated skills course for non-native speakers of English. Emphasis is on reading and vocabulary skill-building activities designed to prepare students for future academic success. An integrated skills format allows reading, grammar, speaking/listening, and writing activities to be combined using themes. (F, Sp)

ESLP 026 Communication Skills I
Prerequisite: ESLP 012 2.0 minimum or Placement Test
Designed for low intermediate level non-native speakers of English. Emphasis is on writing paragraphs to writing academic style essays and using basic word processing skills. Grammatical structures worked on include the simple and perfect verb tenses, sentence combining, and recognizing sentence fragments. A process approach to writing is used. (F, Sp)

ESLP 027 Communication Skills II
Prerequisite: ESLP 012 2.0 minimum or Placement Test
Designed for low intermediate level non-native speakers of English. Emphasis focuses on the features of American English pronunciation, as well as improving listening comprehension and oral communication through functional situations, such as role plays, discussions, and informal reports. (F, Sp)

ESLP 028 Integrated Skills III
Prerequisite: ESLP 021 2.0 minimum or Placement Test
Designed for high intermediate level non-native speakers of English. Emphasis is on reading and vocabulary skill-building activities designed to prepare students for future academic success. An integrated skills format allows reading, grammar, speaking/listening, and writing activities to be combined using themes. (F, Sp)

ESLP 029 ESL Writing Skills III
Prerequisite: ESLP 022 2.0 minimum or Placement Test
Designed for high intermediate level non-native speakers of English. Students write essays using a process approach to writing. Grammatical structures worked on include parts of speech, vocabulary usage, compound and complex sentences, and correct usage of all verb tenses, including perfect tenses. Students use word processing skills. (F, Sp)

ESLP 030 Communication Skills III
Prerequisite: ESLP 023 2.0 minimum or Placement Test
Designed for high intermediate level non-native speakers of English. Emphasis in improving listening comprehension and oral communication skills through group discussions, oral presentations, and projects. Grammar instruction is integrated into the themes for each unit. (F, Sp)

ESLP 101 Vocational Preparation
Prerequisite: ESLP 022 2.0 minimum or Placement Test
This course is designed for advanced level non-native speakers of English who wish to pursue a certificate program of improve their English for work-related goals. Work-related topics will be used to foster the development of language skills. Emphasis is on improving listening comprehension, oral communication, and reading comprehension. (F, Sp)

ESLP 102 Comp for Bus and Tech Purposes
Prerequisite: ESLP 032 2.0 minimum or Placement Test
This course is designed for advanced level non-native speakers of English who will use English for business or technical purposes using a variety of complex sentences and grammatical structures. Students will use a process approach to produce business letters of various types, short reports, and memos. (F, Sp, Su)

ESLP 103 Focus on Pronunciation
Prerequisite: ESLP 033 2.0 minimum or Placement Test
This course is designed for advanced level non-native speakers of English who wish to improve the intelligibility of their speech. Students will have an individual speech profile. Emphasis will be on building awareness of and practicing American English stress, intonation, and rhythm patterns, and clear pronunciation of individual sounds. (F, Sp, Su)

ESLP 110 Bridge to Academic Reading
Prerequisite: ESLP 031 2.0 minimum or Placement Test
This course is designed for low-advanced level non-native speakers of English needing to prepare for reading college-level texts. Emphasis on building teamwork skills, vocabulary, and developing reading strategies and skills to improve overall comprehension. A basic skill reading level 3 is granted upon successful completion of this course. (F, Sp)

ESLP 111 Academic Listening/Notetaking
Prerequisite: ESLP 033 2.0 minimum or Placement Test
This course is designed for advanced level non-native speakers of English who wish to pursue an academic degree or transfer program. Emphasis will be on improving overall listening comprehension, identifying the organizational structure of academic lectures, taking effective notes from a variety of sources, and improving vocabulary. (F, Sp)

ESLP 112 Academic Reading Skills
Prerequisite: ESLP 110 2.0 minimum or Placement Test
Designed to prepare advanced level non-native speakers of English for future academic success. Emphasis is on vocabulary building and developing reading strategies and skills, including critical reading for efficient processing of general academic texts. Basic skills reading level 3 is granted upon successful completion of this course. (F, Sp, Su)

ESLP 113 Composition Academic Purposes
Prerequisite: ESLP 032 2.0 minimum or Placement Test
Designed to prepare advanced level non-native speakers of English for future academic success. Students use a process approach to writing to produce various types of essays using a variety of complex sentences and grammatical structures. Basic skills writing level 4 is granted upon successful completion of this course. (F, Sp)

EWSL - ENSLISH AS A SECOND LANGUAGE WORKSHOP

EWSL 020 ESL Summer Workshop
Prerequisite: Placement Test
This integrated skills course is designed for low to high intermediate non-native speakers of English who wish to improve their oral-communication, writing, and reading skills through in-class activities, guest lectures, and field trips. Students in this class will form cooperative learning groups to work on a variety of projects. (F, Sp, Su)

EWSL 021 ESL Fall Workshop
Prerequisite: Placement Test
Designed for low to high intermediate non-native speakers of English who wish to improve listening, speaking, reading, and writing skills using themes presented in video episodes or readings. Language learning is encouraged through cooperative group activities, interviews, role plays, oral presentations, and projects. May be repeated once for credit. (F, Sp, Su)

EWSL 022 ESL Spring Workshop
Prerequisite: Placement Test
Continuation of ESLW 021. Designed for low to high intermediate non-native speakers of English who wish to improve listening, speaking, reading and writing skills using themes presented in video episodes or readings. Language learning is encouraged through cooperative group activities, interviews, role plays, oral presentations, and projects. (F, Sp)
FILM 119 Film Production I
Prerequisite: None
Introduces storytelling practices using sound and images. Students will learn to plan and produce short programs, developing basic skills in plot structure, staging scenes, photography, sound recording, editing, and audience evaluation. (F, Sp, Su)

FILM 203 Topics in Film/Animation
Prerequisite: None
Provides students with basic photographic skills, an opportunity for intensive study in selected aspects of motion picture production, or multimedia production. (F, Sp, Su)

FILM 226 Film Production II
Prerequisite: FILM 116 2.0 minimum or IMAG 116 2.0 minimum
An intermediate-level course that expands the student's understanding of storytelling practices using sound and images. Hands-on production exercises help the student to develop skills in script writing, storyboarding, production planning, photography, animation, editing, and sound track production. Emphasis on non-linear editing techniques. (F, Sp)

FILM 227 Film Production III
Prerequisite: FILM 116 2.0 minimum or IMAG 116 2.0 minimum
Hands-on production exercises help the student develop skills in script writing, directing, working with dialogue shooting, and editing sound. Students work individually and as groups, applying the principles of problem-solving to produce creative, dramatic, and effective communications programs. (F, Sp)

FILM 281 Motion Picture Internship
Prerequisite: (FILM 226 2.0 minimum or IMAG 226 2.0 minimum) and (FILM 227 2.0 minimum or IMAG 227 2.0 minimum)
Restriction: Motion Picture Production and Motion Picture Direction Majors
An off-campus field study. Students will gain practical experience by working in a motion picture production environment under the supervision of a professional producer or technician. Regularly scheduled progress reports will be given and discussed with a supervising faculty member. Students work a minimum of 160 hours per semester. (F, Sp, Su)

FILM 290 Motion Picture Portfolio
Prerequisite: (FILM 226 2.0 minimum or IMAG 226 2.0 minimum) and (FILM 227 2.0 minimum or IMAG 227 2.0 minimum)
Restriction: Motion Picture Production and Motion Picture Direction Majors
The student will produce a motion picture, demonstrating technical and creative proficiency, under instructor supervision, suitable for presentation for the purpose of securing employment. This course is intended to be the capstone course in the Motion Picture Program. (F, Sp, Su)

FIRE 110 Fire Prevention and Law
Prerequisite: None
This course identifies applicable statutes of Michigan Law as they relate to the Fire Service. Covers selected portions of NFPA 101, the Life Safety Code, appropriate portions of BOCA, and other building codes. Focuses on the importance of an aggressive fire prevention plan in communities. (F)

FIRE 115 Building Construction/Fire Ser
Prerequisite: None
This course involves the essentials of building design and construction for the fire service with emphasis on life safety, evacuation, fire extension, and collapse. (F)

FIRE 120 Chemistry/Hazardous Materials
Prerequisite: None
A college-level chemistry course focusing on hazardous materials encountered by fire fighters. Contains specific elements of NFPA 72, 742 and OSHA CFR 1910.120. Topics include atomic and molecular theory, bonding property of elements, oxidation and reduction reactions, kinetically-molecular theory, solutions, and electrochemistry. Includes Michigan Haz-Mat I First Responder Certification. (F)

FIRE 125 Fire Protection Sys/Equipment
Prerequisite: None
Identifies fixed systems typically encountered by fire fighters responding to industrial complexes or specialized environments. Emphasizes selected portions of detection and alarm (NFPA 72-85), sprinklers and standpipes (NFPA 13 and 1971), and special systems and design. (F)

FIRE 130 Fire Hydraulics/Pump Operation
Prerequisite: MATH 105 2.0 minimum or Math Level 4
Describes the fundamentals of hydraulics, including water supply problems, standards and pump requirements, and practical application of knowledge to fire fighting problems. Includes selected portions of NFPA 1901 and 1902. (Sp)

FIRE 150 Fire Command and Operations
Prerequisite: None
Recommended: FIRE 102 or Firefighter
This course centers on the initial fireground attack from a company officer's perspective. Deals with Engine and Truck Company Operations including initial assignments, use of resources, rescue, stream and salvage. Covers selected portions of NFPA 1002, 1410, 1904, and 1961. Covers the National Fire Academy Incident Command System. (Sp)

FIRE 210 Fire Investigation
Prerequisite: None
Recommended: FIRE 101 or Firefighter
This course investigates fire behavior, importance of determining cause and origin, accidental, incendiary, or arson type fires. Describes methods of examining and identifying remains for arson and covers applicable laws and court procedures. (Sp)

FIRE 220 Hazardous Materials/Fire Ser
Prerequisite: None
Recommended: FIRE 120 or Firefighter
Explores the concepts and methods of detection, control, and mitigation of hazardous materials incidents. Contains specific elements of NFPA 741, 742, and OSHA CFR 1410.120. Includes Michigan Haz-Mat Operations Level Certification. (Sp)

FIRE 250 Fire Administration
Prerequisite: None
Recommended: FIRE 150 or Firefighter
This course provides the student with a better understanding of motivation and the proper reaction from management. Covers labor relations and collective bargaining, fiscal management, and political interaction. Presents modern approaches to the challenges which face today's fire executives. (Sp)

FLKG - FOREIGN LANGUAGE

FLKG 295 Int Study in Foreign Language
Prerequisite: Department Approval
Special research projects and/or individual readings in Chinese, French, German, Japanese or Spanish. 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)
FREN 115 - FRENCH

FREN 115 Conversational French I
Prerequisite: None
Students learn how to communicate orally in everyday life situations and in travel abroad. Emphasis is on development of ability to communicate in French. French culture is explored. (F, Sp, Su)

FREN 116 Conversational French II
Prerequisite: None
Recommended: FREN 115 or Equivalent
Continuation of FREN 115. Designed for advanced beginners who wish to improve their speaking ability in the context of daily living. Emphasis is placed on contemporary vocabulary, essentials of grammar, and pronunciation through class discussions conducted in French. Students will continue to explore different aspects of life and culture in the francophone world. (F, Sp, Su)

FREN 121 Elementary French I
Prerequisite: Reading Level 5
Introductory course open to students with little or no knowledge of French. Students are introduced to basic patterns and structures of French, enabling them to develop listening, speaking, reading, and writing skills. Emphasis is placed on contemporary vocabulary, essentials of grammar, and pronunciation. (F, Sp, Su)

FREN 122 Elementary French II
Prerequisite: FREN 121 1.5 minimum and Reading Level 5
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
Prerequisite: FREN 122 1.5 minimum and Reading Level 5
First course of a two-semester sequence. Course provides grammar review, vocabulary building, listening comprehension, composition writing, group discussions, and readings of literary and cultural texts, short stories, and news articles for a better understanding of the francophone world. (F)

FREN 202 Intermediate French II
Prerequisite: FREN 201 1.5 minimum and Reading Level 5
Second course of a two-semester sequence. Course includes a review of more complex grammar topics, readings of cultural and literary texts, short stories, and newspaper articles for a better understanding of the francophone world. Students will improve fluency through listening-comprehension, writing, and discussions in the target language. (Sp)

GEOG - GEOGRAPHY

GEOG 120 Introduction to Geography
Prerequisite: Reading Level 5
Recommended: WRT 121
An introductory course designed to provide contemporary geographic ideas and techniques to study the interaction between people and their physical environment. (F)

GEOG 121 Physical Geography
Prerequisite: Reading Level 5 and Writing Level 6
Recommended: Word Software Experience
Emphasizes landforms, natural vegetation, weather and climatic elements, and soils. Offers an extensive study of these forces, noting their ecological principles and their effects on human life. Includes computer mapping techniques, land use analysis, and all-photo interpretation. (F, Sp, Su)

GEOG 200 World Regional Geography
Prerequisite: Reading Level 5
This course describes and analyzes human relationships with the natural and cultural environment and examines the physical and cultural aspects of the major regions of the world. International interdependency is examined to promote global awareness. (F, Sp, Su)

GEOG 202 Geography of North America
Prerequisite: Reading Level 5
A study of the human and physical aspects of North America. This course will identify some of the factors that influence the quality of life and give character to each of the various subregions. (Sp)

GEOG 203 Economic Geography
Prerequisite: Reading Level 5
The study of the distribution of economic activities throughout the world. Emphasizes agriculture, resources, population, industry, urbanization, and trade. (So)

GEOG 295 Independent Study in Geography
Prerequisite: Department Approval
Independent study involving reading and research in geography. This project, chosen by the student, must be approved in advance by the department chair and supervised by a faculty member. It must also meet specific academic goals. (F, Sp, Su)

GEOL - GEOLOGY

GEOL 210 Geology Field Studies
Prerequisite: None
Opportunities to gain geology field experience through application of skills learned in the classroom. One-day and overnight excursions are offered. (Destination examples: Michigan gypsum mines, Michigan Upper Peninsula iron and copper country, Cincinnati fossil beds, Grand Ledge quarries, Western U.S. regional geology, etc.) (Su)

GEOL 221 Physical Geology
Prerequisite: Reading Level 5 and Writing Level 4 and Math Level 4
This course investigates the dynamic physical earth using a cause-effect theme, and emphasizes relationships of geologic cycles (tectonic/hydrologic) to modifications of earth's crust (e.g., volcanism, mountain building, rivers, glaciers) with introduction to environmental topics and earth resources. Laboratory includes mineral and rock identification, topographic and geologic map interpretation, and plate tectonics exercises. (F)

GEOL 222 Historical Geology
Prerequisite: Reading Level 5 and Writing Level 4 and Math Level 4
Plate tectonics is used to integrate crustal and organic evolution in the dynamic global system. Includes methods of geologic inquiry and critical evaluation of evidence. Laboratory stresses interpretation of the rock and fossil records, reconstruction of past ecosystems, geologic maps, and plate tectonics influence on the environment. (Sp)

GEOL 230 Environmental Geology
Prerequisite: Reading Level 5 and Writing Level 4 and Math Level 4
Concepts of physical geology are applied to human interaction with the environment. Geologic resources (e.g., minerals, energy, and water) and hazards (e.g., earthquakes, landslides, and flooding) are explored. Laboratory includes rock and mineral identification, map reading and interpretation, evaluation of land use alternatives, and problem-solving activities related to environmental issues. (F)

GERO - GERONTOLOGY

GERO 100 Introduction to Human Aging
Prerequisite: Reading Level 5 and Writing Level 4
This course provides a basic orientation to the field of gerontology with emphasis on social aspects: demography, physiology, psychology, sociology, economics, environment, death and dying, and community and government programs. (F, Sp)

GERO 101 Programs/Services for Aging
Prerequisite: None
Recommended: GERO 100
This course provides a description of the organization and functions of the aging services network, its relationship to the broader human services system, and how the services worker can use or develop community resources for the benefit of older adults. (Sp)

GERO 119 Age Processes: Facts/Myths/Chinks
Prerequisite: None
This course includes an overview of facts and myths associated with older adults, including normal physical changes and their implications; social/communicative aspects of aging, including communication issues; and federal, state, and local resources for the older adult. (F, Sp)
GERO 131 Pin for Older Adults w/Dev Dis
Prerequisite: None
This course presents an overview of the older adult with developmental disabilities including characteristics, demographics, public policy issues, and functional assessment. Michigan program initiatives are discussed and case studies are presented. (F, Sp)

GERO 161 Issues of Aging: Sexuality
Prerequisite: None
This course presents an overview of issues relating to sexuality and older persons. Topics are societal attitudes, sexual behavior patterns, physiological changes, psychological responses, and special situations, such as institutional settings. (F, Sp)

GERO 164 Med & Alcohol Use/Older Adults
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
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
Prerequisite: None
This course focuses upon issues such as guardianship, conservatorship, power of attorney, the living will, joint tenancy, nursing home residency, and civil commitment, including actual and perceived choices a person has as aging and illness occur. (F, Sp)

GERO 170 Depression: Recog & Treatment
Prerequisite: None
This course provides an examination of depression in later life. Symptoms, causes, "masks," diagnosis, and assessment of depression are introduced, including information on distinctions between depression and dementia. Basic techniques and guidelines for working with depressed older persons are presented. (F, Sp)

GERO 171 Tech: Care for Persons w/Demen
Prerequisite: None
This course provides an introduction to techniques for working with older adults with Alzheimer's disease and related disorders. The psychosocial needs of individuals and their families are a primary focus. Communication techniques, programming approaches, handling problem behaviors, a task breakdown approach, environmental adaptations, and role of the family are discussed. (F, Sp)

GERO 173 Activ: Older Adults w/Alzheimer
Prerequisite: None
This course provides an overview of planning principles and processes effective in designing meaningful activities for older adults with Alzheimer's disease and related disorders. Practice opportunities are included. (F, Sp)

GERO 191 Seminar: Special Subjects
Prerequisite: None
This course consists of a series of seminars which address the most current issues in the field of gerontology. The seminars are designed to provide the most up-to-date information on selected, high-interest subjects concerning human aging. (F, Sp, Su)

GERO 203 Physical/Mental Health Aging
Prerequisite: GERO 100 2.5 minimum or Concurrently
Physical and mental health of older adults is examined from an applied perspective for human services providers. Topics include normal and pathological changes; family and social factors; skills and adaptations for maintaining good physical health; assessment; intervention and skills for helping older adults access appropriate treatment in the health care system. (F)

GERO 282 Gerontology Practicum I
Prerequisite: SOWK 203 2.5 minimum and Reading Level 5 and Writing Level 6 and Department Approval
Recommended: GERO 100 and GER 100 and GER 203 and HUSE 101 and Human Services Experience.
This course combines classroom training with field placement (10 hours per week) at a community agency or institution serving older persons. Students apply learning about structure, funding, and organization of aging services; explore community resources; demonstrate appropriate work habits; assess their abilities and career skills in gerontology, and relate current aging research to practice. (F)

GERO 284 Gerontology Practicum II
Prerequisite: GERO 282 2.5 minimum
This course provides advanced field placement experience at a community agency or institution serving older persons (10 hours per week), combined with classroom training in practice concepts related to service delivery to older persons. Students learn resources and systems, develop networking skills, mobilize resources on behalf of older individuals or groups, and demonstrate their suitability for a career in gerontology. (Sp)

GRET 100 Geographic Information Systems

GRET 203 Beginning MicroStation
Prerequisite: None
Recommended: LAND 282 or Basic CAD Experience
This entry-level, computer-aided design and drafting course uses MicroStation software on an Intergraph workstation or P.C. Students will create 2-D drawings using basic graphic tools and procedures. (F, Sp)

GRET 204 MicroStation Graphic Environ
Prerequisite: GRET 203 2.0 minimum
This course explores the MicroStation graphic environment using the Intergraph Workstation. The analysis package, MGA, will be utilized as well. The development of a prototype Geographic Information System will be a highlight of this course. (F, Sp)

GRET 205 Principles Geographic Info Sys
Prerequisite: None
This course describes the components of a basic GIS and how they are assembled. Acquisition of data, maps, and other information used to build a database will be highlighted. A basic pilot project will be demonstrated step-by-step through various applications in GIS. (F, Sp, Su)

GRET 208 Advanced Techniques in GIS
Prerequisite: GRET 204 1.0 minimum
This course expands upon the techniques, methods, and processes involved in developing a full GIS program. Different GIS software packages will be explored, as well as related databases and completed projects. (F, Sp)

GRET 209 Applications in GIS
Prerequisite: GRET 205 1.0 minimum and GRET 208 1.0 minimum
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 resources, energy, and communication will be highlighted. A semester-long application project of your choice will be developed on the computer. (Sp)

GRET 210 Global Positioning Systems
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 Geomedia-Internet GIS
Prerequisite: None
This course covers the basics of computer mapping systems and how they relate to computer design, graphics, and GIS. C-Msp, Map Info., and Mapping Office will be presented. Students will produce a variety of maps as they relate to daily activities, land planning, environmental geography, and information systems. (F, Sp)
GRET 213 Advanced MicroStation
Prerequisite: GRET 202.0 minimum
This course is an advanced application of the MicroStation Software and deals with 3-D and other advanced aspects of this computer-aided drafting and design package. A basic understanding and/or beginning MicroStation class is necessary for success in this class. (F, Sp)

GRET 220 Hydrological Systems
Prerequisite: None
This course will cover the various aspects of water resources as they pertain to the geographic information system environments. Water systems, natural and man-made, will be emphasized. The evaluation, analysis, and environmental impacts of various water features as they pertain to environmental research and development will be highlighted. (F)

GRET 221 Landforms/Soil Systems in GIS
Prerequisite: None
This course will discuss the important classifications of landform and soil systems. The relevance of these systems in the GIS environment will be highlighted. The importance of these systems in the information processing, land use, land planning, site design, and landscape form arenas will be emphasized. (Sp)

GRET 223 Environmental Resource Mgmt
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 Cartography in GIS
Prerequisite: None
The basic principles, functions, and origins of maps will be discussed. The student will construct various types of maps. Computer-aided cartography and design along with how to read, print, and design maps will also be covered. (F)

GRET 241 Remote Sensing/AirPhoto Interpret
Prerequisite: None
This course will include the development of skills necessary for basic interpretation of aerial photography and GIS. (F, Sp)

GRET 243 ORACLE/Geographic Info Sys
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 248 GIS/GPS Field Systems
Prerequisite: None
GIST/Station 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 253 Basics of ARC/View
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 255 Beginning ARC/Info
Prerequisite: None
Recommended: Computer Experience
This course will be an introduction to the use of the ARC/INFO software. ARC/INFO is a leading product used in the design of Geographic Information Systems. Basic product use and modeling will be demonstrated. There will be hands-on experience in the lab. (F, Sp)

GRET 256 Advanced ARC/Info
Prerequisite: GRET 255.0 minimum
This course advances the techniques acquired in the beginning ARC/INFO class. The student will learn advanced modules and advanced application of modules such as GRID and TIN. The student will also develop projects using data sets. Students will develop a complete GIS project utilizing the full ARC/INFO module. (F, Sp)

GRET 295 GRET Project Lab
Prerequisite: Department Approval
This project lab is designed for students who wish to pursue a specialty area in GIS beyond that which is offered in our curriculum. Inquiry through research and design is required. (F, Sp)

GRMN - GERMAN
GRMN 115 Conversational German I
Prerequisite: None
The first course in a two-semester sequence for persons with little or no knowledge of German. Emphasizes listening and speaking skills. Students learn correct pronunciation, essential language structures, and a practical vocabulary applied in conversational exchanges. Aspects of German culture are introduced through multimedia presentations. (F, Sp, Su)

GRMN 116 Conversational German II
Prerequisite: None
Recommended: GRMN 115 or Equivalent
The second course in a two-semester sequence for persons with little or no knowledge of German. Emphasizes listening and speaking skills. Students learn correct pronunciation, essential language structures, and a practical vocabulary applied in conversational exchanges. Aspects of German culture are introduced through multimedia presentations. (F, Sp, Su)

GRMN 121 Elementary German I
Prerequisite: Reading Level 5
First course of a two-semester sequence in elementary German. This course offers systematic practice in the four basic language skills: listening comprehension, speaking, reading, and writing. Communicative approach is combined with a solid grammar foundation, as well as familiarization with contemporary life and culture in Germany, Austria, and Switzerland. (F)

GRMN 122 Elementary German II
Prerequisite: GRMN 121 1.5 minimum and Reading Level 5
Second course of a two-semester sequence in elementary German. This course offers more advanced practice in the four basic language skills: listening comprehension, speaking, reading, and writing. Communicative approach is combined with more complex structure as well as familiarization with contemporary life and culture in Germany, Austria, and Switzerland. (Sp)

GRMN 201 Intermediate German I
Prerequisite: GRMN 122 1.5 minimum and Reading Level 5
First course of a two-semester sequence in intermediate German. Students receive intensive practice in the basic skills: speaking, listening comprehension, reading, and writing. Course includes a thorough review of German grammar, 20th century short story readings, composition writing, and German culture. Class is taught mainly in German. (F)

GRMN 202 Intermediate German II
Prerequisite: GRMN 201 1.5 minimum and Reading Level 5
Second course of a two-semester sequence in intermediate German. Students receive advanced practice in the basic skills: speaking, listening comprehension, reading, and writing. Course includes a thorough review of advanced structures, short story readings, a short novel, composition writing, and German culture. Class is taught mainly in German. (Sp)

HIST - HISTORY
HIST 150 African-American History
Prerequisite: Reading Level 5
Traces the developments which led to the African slave trade, the slave systems in North and South America, the cultural heritage of the African American in the Americas, and the problems of race in North American culture. (Sp)
HIST 210 Studies in American History 4
Prerequisite: Reading Level 5
Covers problems of research, writing, philosophy, and interpretation of history, involving a detailed examination of a particular area of American history. (Sp)

HIST 211 U.S. History to 1877 4
Prerequisite: Reading Level 5 and Writing Level 6
A history of the United States from colonial beginnings through reconstruction. (F, Sp, Su)

HIST 212 U.S. History; 1877 To Present 4
Prerequisite: Reading Level 5 and Writing Level 6
A history of the United States from the end of reconstruction to the present. (F, Sp, Su)

HIST 214 African History 4
Prerequisite: WRIT 121 2.0 minimum or WRIT 131 2.0 minimum or (Reading Level 5 and Writing Level 6)
Surveys African history with emphasis on precolonial and colonial Africa, nationalism and the struggle for independence, colonialism and economic development, underdevelopment, and cultures and traditions as factors in development. Covers some of these topics in three other countries of the Third World (e.g., Brazil, Pakistan, and Indonesia). (F)

HIST 220 Michigan History 4
Prerequisite: WRIT 121 2.0 minimum or WRIT 131 2.0 minimum or (Reading Level 5 and Writing Level 6)
A survey of the political, economic, and social development of Michigan from pre-colonial times to the present. (F)

HIST 230 British History 4
Prerequisite: WRIT 121 2.0 minimum or WRIT 131 2.0 minimum or (Reading Level 5 and Writing Level 6)
A survey of the political, economic, legal, constitutional, and social forces which shaped British history and society from earliest times to the present with special emphasis on the interactions of British and American institutions, values, and ideas. (Sp)

HIST 240 Latin American History 4
Prerequisite: Reading Level 5
Recommended: WRIT 121 or WRIT 131 2.0 minimum
A survey of the history and culture of Latin America from pre-Columbian civilizations to the present. This course will examine political, social, and cultural developments in Latin America and assess the role of colonialism, nationalism, and world economic trends in shaping Latin American countries. (Sp)

HIST 250 History of Modern Asia 4
Prerequisite: Reading Level 5
Recommended: WRIT 121 or WRIT 131
Study of historical-cultural origins and conflicts of content in Zimbabwe and Southern Africa with emphasis on sociocultural causes of conflicts, cultural differences and conflicts, problems of development as sources of conflicts, internal conflicts, external conflicts, international dimensions of conflicts, and solutions to conflicts. (Sp, Su)

HIST 263 Seminar: Russia and the CIS 4
Prerequisite: None
A seminar on Russia and its people from the Russian Revolution of 1917 to the present. Also examined will be the multinational character of the former USSR and the forces that shaped Soviet history, society, and politics, including U.S.-Soviet relations. (Su)

HIST 265 Soci; American Legal Tradition 3
Prerequisite: None
A historical survey of the origins, growth, and development of the American legal-constitutional process. The legal system is studied in the context of American culture by examining the leading cases, philosophies, scholars, institutions, and approaches to the study of law. (Su)

HIST 295 Independent Study 1-4
Prerequisite: Department Approval
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)

HMFS 101 Intro. Hospitality/Tourism 3
Prerequisite: Reading Level 3 and Writing Level 4
Career opportunities in various types of hotels, restaurants and tourism operations are discussed. Includes trends and explains the importance of the various segments as they work together to provide quality guest service. (F, Sp, Su)

HMFS 110 Sanitation and Safety 3
Prerequisite: None
Safe food handling, prevention of food spoilage and transfer of bacteria, maintenance of equipment and facilities, and importance of good personal hygiene in the workplace are discussed. HACCP explained. OSHA laws described and illustrated. Includes examinations for national and state sanitation. (F, Sp)

HMFS 131 Food and Beverage Management 4
Prerequisite: HMFS 101 2.0 minimum or Concurrently Recommended: HMFS 110 2.0 minimum
Overview of food preparation with focus on management issues and quality. Includes laboratory activities to practice safe operation of equipment, to plan, prepare, serve and manage complete meals for public consumption. Cost controls, purchasing, and beverage management discussed. (F, Sp)

HMFS 132 Food Production 4
Prerequisite: HMFS 101 2.0 minimum or Concurrently and HMFS 131 2.0 minimum Recommended: Minimum 2.0 in HMFS 101 and HMFS 135 Advanced food preparation procedures with guidelines on organization of food and beverage production. Food purchasing and proper storage prior to production is examined. Includes terminology, theory, planning, organization, productivity techniques, costing, purchasing, sales, service and management of meal for public consumption. (F, Sp)

HMFS 134 Nutrition and Healthy Eating 3
Prerequisite: None
Eating out sensibly discussed plus explanation of nutrients and their role in maintaining health. Examination of food patterns, weight control and maintaining a healthy lifestyle with reasonable exercise. Includes nutritional analysis of 24-hour food consumption. (F, Sp)

HMFS 135 Hospitality Purchasing 3
Prerequisite: HMFS 101 2.0 minimum or Concurrently Recommended: HMFS 131 2.0 minimum
Responsibilities of a purchasing agent and role with vendors in an effective purchasing program are explained; focus on writing specifications, purchasing for all categories of foods and supplies, cutting test procedures and standard receiving procedures. Emphasis on how to make effective managerial purchasing decisions. (F, Sp)

HMFS 137 Catering Management 4
Prerequisite: None
Recommended: Minimum 2.0 in HMFS 110 and HMFS 132 and HMFS 135
Sequential steps to successful catering are presented from determining client needs, planning of menus, purchasing, costing and pricing events, establishing equipment requirements, examining both on- and off-premise functions, recognizing sanitation concerns, and designing contractual agreements with clients. Lab preparation and presentation of a catered event. (F, Sp)

HMFS 190 Internship and Seminar 3
Prerequisite: HMFS 101 2.0 minimum
Recommended: Minimum 2.0 in HMFS 131 and HMFS 204
Hands-on experience in an operating foodservice facility, lodging property or travel operation that supplements and illustrates classroom discussions of principles, techniques and procedures commonly practiced in the industry. Development of professional portfolio included plus a minimum of 250 hours of approved paid work experience. (F, Sp)

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HMFS 203 Hospitality Law 3
Prerequisite: HMFS 101 2.0 minimum
Recommended: Minimum 2.0 in HMFS 131 and/or HMFS 206
Legal problems and issues commonly faced in hospitality operations including rights and responsibilities of innkeepers, restaurateurs, caterers, and other food establishments; guest relationships; guest property rights; wages, employment, safety, tax, and liquor laws. Current court cases discussed. (F; Sp)

HMFS 204 Hospitality HR Management 3
Prerequisite: None
Recommended: HMFS 101 and HMFS 170 and HMFS 203
Supervisor's role as a leader, coach, and personnel manager; topics include managing culturally diverse workers plus recruitment, selection, orientation, training, evaluating, and disciplining employees. Discussion on retaining employees, sexual harassment, and worker motivation. (F; Sp)

HMFS 205 Hospitality Management 3
Prerequisite: HMFS 101 2.0 minimum and HMFS 204 2.0 minimum or Concurrently
Recommended: HMFS 131 and HMFS 203
A survey of management principles and practices in the hospitality industry. Topics include basic financial statements, operating ratios, planning, organizing, directing, and controlling related to lodging and food service operations. (F; Sp)

HMFS 206 Rooms Division Management 3
Prerequisite: HMFS 101 2.0 minimum or Concurrently
Reservations and sale of hotel rooms, operation of front office, review of check-in and check-out procedures, credit card processing, property security, daily audit and the importance of keeping accurate records. Includes yield management and determining room rates, forecasting based on statistical analysis, posting accounts and budgeting. (F; Sp)

HMFS 215 Hospitality Sales/Marketing 3
Prerequisite: HMFS 101 2.0 minimum or Concurrently
Recommended: Minimum 2.0 in HMFS 131 and/or HMFS 206 and HMFS 170
Design and evaluation of sales promotions; strong marketing plans and marketing alternatives; includes techniques for market analysis, needs assessment and creation of packages and joint ventures such as co-branding. Trends in branding and methods to evaluate marketing effectiveness will be discussed. Project included. (F; Sp)

HMFS 229 Convention/Meeting Management 3
Prerequisite: HMFS 101 2.0 minimum or Concurrently
Recommended: Minimum 2.0 in HMFS 131 and/or HMFS 206 and HMFS 170
Determination of client needs, evaluating capability of facility and community resources and marketing for convention business is included. Methods of evaluating successful conventions and meetings are examined and the use of software programs to book events and maintain client records. (F)

HMFS 232 Food and Labor Cost Control 3
Prerequisite: HMFS 101 2.0 minimum or Concurrently and (HMFS 207 2.0 minimum or ACCG 101 2.0 minimum) and Math Level 3
Recommended: Minimum 2.0 in HMFS 204 and HMFS 205
Strategies for making a profit and controlling food, beverage and labor costs are examined. Includes discussion of quality versus cost factors and an analysis of records to detect problems. Includes examination of facility management strategies to reduce costs and save energy. Methods for increasing revenues are discussed and evaluated. (F; Sp)

HMFS 240 Current Topics in Hospitality 3
Prerequisite: HMFS 101 2.0 minimum and HMFS 204 2.0 minimum and HMFS 205 2.0 minimum
Recommended: Minimum 2.0 in HMFS 206 and HMFS 215
Examination of current trends, issues and topics affecting the hospitality industry. Each offering will change emphasis with possible topics such as Internet marketing, projected and pending legislation, casino and resort management, technological advancements, facility management, leadership development, and industry globalization. (F; Sp)

HMFS 251 Wine Appreciation 1
Prerequisite: Must be 21 Years of Age
Selection and storage of five basic wine types, how they are made and served; evaluation of wine based on appearance, bouquet and taste. Discussion on food compatibility with comparative taste evaluations. (F; Sp)

HMFS 252 Wines of America 1
Prerequisite: Must be 21 Years of Age
A study of the wine making industry in America with emphasis on wines from California, New York, Michigan and Ohio. Comparative taste evaluations and discussion of food compatibility. (F; Sp)

HMFS 253 Wines of France 1
Prerequisite: Must be 21 Years of Age and (HMFS 251 or HMFS 252)
Examine, in depth, the history and regional differences exhibited by the major wine producing areas of France - the world's leader and most famous wine producer. Through tasting, students will travel through the regions of Bordeaux, Burgundy, Champagne, Alsace, Rhone, and Loire Valley. (Sp)

HMFS 254 Mixology 4
Prerequisite: None
More than bartending; includes accuracy and efficiency in preparation of many mixed beverages that are explained and demonstrated; includes strategies for controlling over and under pouring, bar management and theft. Industry standards explained (glassware, garnishing and service) with emphasis on sanitation issues. Student preparation in laboratory setting. (F; Sp, Su)

HMFS 260 Gourmet Basic Cookery 2
Prerequisite: None
Recommended: HMFS 110
Beginning basics of menu planning, recipe selection, purchasing of ingredients, correct preparation and service. Cost issues and sanitation concerns emphasized. Preparation and evaluation of meals included. (F, Sp, Su)

HMFS 261 Gourmet Italian Cookery 2
Prerequisite: None
Recommended: HMFS 110
Regional and national foods from Italy with specialty menus from each major region. Meal planning, food purchasing and food preparation included. Local community experts contribute their expertise to the class. Preparation and evaluation of meals included: opening and closing kitchen procedures practiced. (F; Sp)

HMFS 263 Gourmet American Cookery 2
Prerequisite: None
Recommended: HMFS 110
Explore why the U.S. is considered the "Melting Pot" of the world. During this course, you will travel through 8 different regional cuisines. Emphasis on nutrition and personal hygiene are essential topics along with various kitchen safety practices. (F)

HMFS 264 Gourmet Barbecue Cookery 2
Prerequisite: None
Recommended: HMFS 110
Innovative approaches to preparing flavorful grilled foods; includes meats, vegetables, hors d'oeuvres, sides, salads and desserts. Learn how to create memorable plates. Preparation and evaluation of meals included: opening and closing kitchen procedures practiced. (F, Sp, Su)

HMFS 266 Gourmet Chinese Cookery 2
Prerequisite: None
Recommended: HMFS 110
Learn basic techniques in the preparation of popular favorites such as beef, pork, chicken, almond, and egg rolls; emphasis on proper sauces and "hot" cooking techniques. Preparation and evaluation of meals included: diverse taste, texture and aroma; opening and closing kitchen procedures practiced. (F; Sp, Su)

HMFS 268 Gourmet Middle Eastern Cookery 2
Prerequisite: None
Recommended: HMFS 110
Unique ingredients and preparation procedures from various Middle Eastern countries are examined and explored. Includes preparation of entrées; also snacks and desserts followed by detailed evaluations as to quality and customer acceptance. Preparation and evaluation of meals included; opening and closing kitchen procedures practiced. (F, Sp, Su)

HMFS 273 Gourmet Cajun Cookery 2
Prerequisite: None
Recommended: HMFS 110
Louisiana is home of Cajun and Creole cooking. Learn how to prepare a variety of recipes from this popular cuisine utilizing different herbs, spices and techniques. Preparation and evaluation of meals included; opening and closing kitchen procedures practiced. (Sp)
HMFS 274 Gourmet Lean Cooking 2
Prerequisite: None
Recommended: HMFS 110
Healthy ingredients alternatives examined to reduce the fat, salt and calories in preparation of a variety of favorite recipes. Includes discussion of food composition and making healthier food choices through improved purchasing decisions. Preparation and evaluation of meals included; opening and closing kitchen procedures practiced. (F, Sp, Su)

HMFS 275 Bakery Products 2
Prerequisite: None
Recommended: HMFS 110
Learn the rules of each baking ingredient, scaling, mixing and baking techniques to achieve high quality products. Production of breads, quick breads, pies, cakes, pastries and cookies made in a commercial bakery. Scratch and convenience lines examined and tested. (F, Sp)

HMFS 276 Ice Carving Seminar 0.5
Prerequisite: None
This course is designed to expose the student to the tools, techniques, and skills required to carve a block of ice. The student will be carving from a block of ice before the conclusion of the course. This is a hands-on, one day course. (F, Sp)

HMFS 280 Food Decorating Garnishes 3
Prerequisite: None
Recommended: HMFS 110 and HMFS 132
Garnishing and presentation of various cold foods such as canapes, hors d'oeuvres and vegetable garnishes plus the use of spices, sauces and dressings. Food sculpture included. Set-up of lunch reception included. Preparation and evaluation of meals included; opening and closing kitchen procedures practiced. (Sp)

HMFS 281 Soups and Sauces 3
Prerequisite: None
Recommended: HMFS 110 and HMFS 132
Composes several different types of soups using raw materials. Topics discussed: seasonings in stock, glazes prepared from stocks, preparation of various soups, proper garnish of soups, and major classifications and uses of sauces. (Sp)

HONR 151 Honors Colloquium I 1
Prerequisite: Honors Program Approval
Interdisciplinary forum for Honors Program members and other interested students. Includes presentations by experts in such fields as the arts, business, communication, education, humanities, government, mathematics, science, and the social sciences, followed by discussion. Topics concerning international issues, diversity, and technology are often featured. Students write essays reacting to each presentation. (F)

HONR 152 Honors Colloquium II 1
Prerequisite: Honors Program Approval
Interdisciplinary forum for Honors Program members and other interested students. Includes presentations by experts in such fields as the arts, business, communication, education, humanities, government, mathematics, science, and the social sciences, followed by discussion. Topics concerning international issues, diversity, and technology are often featured. Students write three substantive research papers. (F)

HONR 155 Service Learning Practicum 1
Prerequisite: Honors Program Approval
A practicum course requiring a minimum of 32 hours of volunteer service with a community agency of the student's choice and attendance at three classroom discussion sessions. Students will develop practical skills and evaluate their service in terms of its relevance to the community and their educational, career, and life goals. (Sp)

HORT 102 Intro Ornamental Horticulture 2
Prerequisite: None
An introductory course involving botanical and horticultural principles and practices. Basic plant structures and their functions as well as soil and plant nutrition are discussed. Job opportunities and the role of horticulture will also be covered. Field trips and laboratory experiments will highlight the course. (F, Sp)

HORT 103 Foliage and Flowering Plants 2
Prerequisite: None
This hands-on course will allow the student to work with various aspects of the growth and propagation of typical flowering and foliage plants. The student will grow a collection of plants and explore various horticultural practices with their own plant material in a laboratory setting. (F, Sp)

HORT 105 Pest/Problem Ornamental Plants 2
Prerequisite: None
This course is for the professional or homeowner interested in a knowledge of basic environmental and specific pest problems of trees and shrubs. Problems related to soil, light, water, planting, and fertilizer as well as insects, diseases, and vertebrates will be discussed. Integrated pest management and total plant health concepts will form the basis for problem management. (F, Sp)

HORT 107 Beginning Floral Design 2
Prerequisite: None
This is an introductory course for students interested in learning the principles of floral design. Tools and techniques as well as basic arrangement shapes are learned through hands-on experiences. Students will use fresh, silk, and dried flowers to create traditional and contemporary designs. (F, Sp, Su)

HORT 109 Contemporary Floral Design 2
Prerequisite: None
Recommended: Basic Floral Design Experience
Contemporary floral designs are taught as well as theme arrangements, tools, and techniques. The basic principles of design are reviewed with the student transferring techniques to stylized arrangements. This is a hands-on course with participants working with floral materials each week. (F, Sp, Su)

HORT 110 Wedding Floral Design 2
Prerequisite: None
Recommended: Basic Floral Design Experience
The course is designed for the advanced floral designer who has demonstrated the ability to apply the principles of design. Wedding designs covered include: floral, cascade, crescent, and arch bouquets. This is a hands-on class with students working with floral materials each week. (F, Sp, Su)

HORT 143 Cut Flower, Foliage, Pot Plant 4
Prerequisite: None
The functional aspects of plant material commonly found in the floriculture industry will be covered. The identification of cut flowers, cut foliage, and pot and foliage plants will be required. A course that would benefit the floral designer, greenhouse grower, or landscape designer. (F, Sp, Su)

HORT 230 Plant Propagation/Nursery Op 4
Prerequisite: HORT 102 1.0 minimum
This course will cover the basics of plant propagation and nursery operations. It will focus on the process of setup, planting, and follow-up maintenance. The tools and techniques of seed propagation, as well as cuttings, grafting, budding, and layering will be emphasized. Knowledge of plant selection, soils, pruning, transplanting, and marketing nursery products will be included. (F)

HORT 235 Greenhouse Structures/Environ 3
Prerequisite: None
This course is an introduction to the construction and operation of a commercial greenhouse. Types of greenhouses, including construction materials, are discussed. Environmental control such as heating, cooling, and irrigation practices and procedures are presented. In addition, methods of planting, fertilizing, and insect and disease control are also included to provide a basis of knowledge for greenhouse crop production. (F)

HORT 236 Greenhouse Ornamentals 3
Prerequisite: HORT 235 1.0 minimum
This is an advanced course for the greenhouse grower. The course will cover the production techniques for cut flowers, holiday crops, and other greenhouse ornamentals. Topics of discussion will include scheduling and timing crops, spacing, production costs, and cultural practices. (Sp)

LANING COMMUNITY COLLEGE 2000–2001 219
HUMS 120 Western Art and Music History
Prerequisite: Reading Level 5 and Writing Level 4
An introduction to the masterpieces of art and music from prehistoric times to the 20th century. Audio and visual material will be used to illustrate artistic and musical contributions of Europe and America to the development of Western culture. (F, Sp, Su)

HUMS 160 Mythology
Prerequisite: Reading Level 5
Classical Greek and Roman myths constitute the first half of the course with the remainder chosen from at least two of the following areas: African, American, Far Eastern, Medieval European, Near Eastern, or Norse. Reading and analysis of primary sources in translation and their cross-cultural comparison are emphasized. (F, Sp, Su)

HUMS 211 History of Art I
Prerequisite: WRIT 121 2.0 minimum or WRIT 131 2.0 minimum or (Reading Level 5 and Writing Level 6)
Surveys the history of painting, sculpture, and architecture of world civilizations in Africa, the Americas, Asia and Europe from prehistoric times to the 15th century. Emphasizes analysis and comparison of artistic concepts, styles and techniques; and investigates how the arts reflect ideas, issues, and values of society and the individual. (F, Sp, Su)

HUMS 212 History of Art II
Prerequisite: WRIT 121 2.0 minimum or WRIT 131 2.0 minimum or (Reading Level 5 and Writing Level 6)
Surveys the history of painting, sculpture, and architecture of world civilizations in Africa, the Americas, Asia, and Europe from the 15th to the 20th century. Emphasizes analysis and comparison of artistic concepts, styles and techniques; and investigates how the arts reflect ideas, issues, and values of society and the individual. (F, Sp)

HUMS 213 World Civilizations I
Prerequisite: WRIT 121 2.0 minimum or WRIT 131 2.0 minimum or (Reading Level 5 and Writing Level 6)
Surveys the literature and art, science and technology, and the social and political systems of major civilizations in Africa, Asia, Europe, and the Americas from approximately the 17th century to the present. Emphasizes the contributions of modern civilizations to the creativity, richness, and diversity of the human condition. (F, Sp, Su)

HUMS 214 World Civilizations II
Prerequisite: WRIT 121 2.0 minimum or WRIT 131 2.0 minimum or (Reading Level 5 and Writing Level 6)
Surveys the literature and art, science and technology, and the social and political systems of major civilizations in Africa, Asia, Europe, and the Americas from approximately the 17th century to the present. Emphasizes the contributions of modern civilizations to the creativity, richness, and diversity of the human condition. (F, Sp, Su)
HUSE 246 Substance Abuse: Spec Pop/Adol
Prerequisite: HUSE 112 2.5 minimum or Concurrently
This course surveys substance abuse in various populations including adolescents, older adults, women, individuals with physical or psychological disabilities or challenges, as well as various ethnic groups including African Americans, Native Americans, and Hispanics. Commonalities and areas of uniqueness for each is examined. Reasons for abuse, dependency dynamics, and treatment considerations are explored. (Sp)

HUSE 241 Substance Abuse Prevention
Prerequisite: HUSE 112 2.5 minimum
This course provides a developmental framework for a better understanding of the factors contributing to substance abuse prevention. It facilitates students' abilities to critique existing programs, identify current community needs, and address the growing demand for consultation and assistance in the field of substance abuse prevention. (Sp)

HUSE 242 Chemically Dependent Family
Prerequisite: None
Recommended: HUSE 112
This course provides a conceptual framework within which to understand, assess, and effectively intervene in a family or individual in a counseling fashion with the chemically dependent family. Specific subgroups and issues within or resulting from the chemically dependent family are explored. (F)

HUSE 244 Sub Abuse Treatment, Intrv
Prerequisite: HUSE 112 2.5 minimum
This course covers the addiction cycle of alcoholics and drug abusers, personality and interactional patterns of addiction, and group work techniques. It provides an analysis of current models of treatment within programs, including review of inpatient, outpatient, halfway houses, and institutional programs. (F)

HUSE 282 Human Services Practicum I
Prerequisite: SOWL 203 2.5 minimum and Reading Level 5 and Writing Level 5 and Department Approval
Recommended: HUSE 101 and SOWL 254 or SOWL 260 and Human Services Experience
This course provides classroom training in the field of human services. This phase of field placement provides an opportunity for the student to observe the level of human services professionalism within the field. (F, Sp)

HUSE 284 Human Services Practicum II
Prerequisite: HUSE 282 2.5 minimum
This course provides classroom training in the field of human services delivery with advanced practical experience (40 hours per week) in a community-based human service agency. Emphasis is on the individual and the systems of which the community is a part. This phase of field placement provides an opportunity for the student to observe the level of human services professionalism within the field. (F, Sp)

HUSE 286 Substance Abuse Practicum I
Prerequisite: SOWL 303 2.5 minimum and Reading Level 5 and Writing Level 6 and Department Approval
Recommended: HUSE 101 and HUSE 240 and HUSE 241 and HUSE 244
This course combines classroom training with beginning field placement (10 hours per week) at a community agency specializing in substance abuse. Content focuses on the community power structure, funding, and the internal workings of a substance abuse agency. It explores opportunities in the field force, certification requirements, and networking. (F)

HUSE 288 Substance Abuse Practicum II
Prerequisite: HUSE 286 2.5 minimum
This course combines advanced field placement (10 hours per week) at a community agency specializing in substance abuse, with classroom instruction in concepts related to social control. Students will identify systems and resources to link the system with the people receiving services and learn how to mobilize the system and the people. (Sp)

HVC 105 Sheet Metal Fabrication/Metal
Prerequisite: None
Designed to aid the installer in the skills and techniques for installation of residential heating and cooling systems. Topics include sheet metal layout, identification of sheet metal fittings and general furnace installation procedures. (F, Sp, Su)

HVC 110 Applied Electricity I
Prerequisite: None
An introduction to basic electricity (AC and DC) using both theory and applied study methods. Topics will include electrical components, symbols, basic schematic diagrams, Ohm's Law applied to series and parallel circuits and motor types and uses. In conjunction with lab exercises, meters and their proper usage will be covered. (F, Sp, Su)

HVC 111 Applied Electricity II
Prerequisite: HVC 100 1.5 minimum and HVC 110 1.5 minimum
The study of motors with an emphasis on theory, troubleshooting and servicing. Motor controls, control circuits, protection devices and displays and energy conservation related to motors will be covered in detail. (F, Sp)

HVC 120 Heating I
Prerequisite: HVC 100 1.5 minimum and HVC 110 1.5 minimum
Basic construction and function of components in residential gas and oil fired furnaces and boilers as well as troubleshooting and servicing. Off-board and on-board functions will be included. (F, Sp)

HVC 130 Air Conditioning I
Prerequisite: HVC 100 1.5 minimum and HVC 110 1.5 minimum
Fundamentals and principles of residential air conditioning systems. Students will learn soldering and brazing of tubing, wiring, component testing, evacuation procedures, charging and maintenance of both split systems, as well as small package units. (F, Sp)

HVC 201 Mechanical Code
Prerequisite: HVC 120 1.5 minimum and HVC 130 1.5 minimum
A fundamental course designed to acquaint students with the methods and techniques used in the inspection of mechanical systems. Both the Uniform Mechanical Code and the Building Officials and Code Administrators (BOCA) Code will be discussed. (F, Sp)

HVC 211 Schematics
Prerequisite: HVC 100 1.5 minimum and HVC 110 1.5 minimum
An in-depth study into the cause and effect aspects of schematic diagrams. Students will learn to simplify complicated schematics to obtain the sequence of operation necessary for the proper troubleshooting of heating, ventilation and air conditioning equipment. (F, Sp)

HVC 220 Heating II
Prerequisite: HVC 111 1.5 minimum and HVC 120 1.5 minimum and HVC 211 1.5 minimum
Fundamentals and principles of electronic ignition systems including troubleshooting and servicing. The major emphasis is placed on high efficiency and condensing furnaces to include sequence of operation, troubleshooting, servicing and proper installation. (F, Sp)

HVC 221 Introduction to Hydronics
Prerequisite: HVC 220 1.5 minimum
Covers hot water and steam residential heating systems, piping and all accessories, safety controls, expansion tanks, zone valves, installation procedures and code requirements. Students perform testing, troubleshooting, adjusting and servicing of components to insure maximum efficiency. (F, Sp)

HVC 230 Air Conditioning II
Prerequisite: HVC 111 1.5 minimum and HVC 130 1.5 minimum and HVC 211 1.5 minimum
Advanced air conditioning, light commercial equipment, water cooled units, cooling towers and air handling unit control systems. The latest in heat equipment and motors will aid the student in becoming proficient in servicing and maintaining commercial equipment. (F, Sp)

HVC 231 Heat Pump
Prerequisite: HVC 230 1.5 minimum
This course deals entirely with heat pumps (air-to-air, water-to-air) and their installation, servicing, proper application of heat pump components and extensive wiring schematics. (F)
## HVAC 240 - Refrigeration I

**Prerequisite:** HVAC 230 1.5 minimum or Concurrently  
Domestic refrigeration as applied to refrigerators, freezers and de-humidifiers. Course content includes applications, operation and servicing of sealed systems, electrical and cabinet styles. (F)

**HVAC 241 - Refrigeration II**  
**Prerequisite:** HVAC 240 1.5 minimum  
Light commercial refrigeration to include low and medium temperature applications, as applied to ice machines, walk-ins, reach-ins and display cases. (Sp)

**HVAC 250 - Pneumatic Control**  
**Prerequisite:** HVAC 250 1.5 minimum  
Basic concepts of pneumatic controls for HVAC equipment in commercial structures and the adjustment and calibration of pneumatic equipment. (Sp)

**HVAC 251 - Fund of Direct Digital Control**  
**Prerequisite:** HVAC 250 1.5 minimum  
Fundamentals and principles of Direct Digital Controls will be covered. The major emphasis will be placed on computer based energy management systems to increase efficiency of HVAC's commercial and industrial equipment. (F)

### IMDS - DIAGNOSTIC MEDICAL SONOGRAPHY

**IMDS 200 - Sonographic Introduction**  
**Prerequisite:** Admission to Diagnostic Medical Sonography Program  
**Co-requisite Courses:** IMDS 201 and IMDS 202 and IMDS 280  
Introduction to sonography including equipment history, criteria, limitations of ultrasound, and sonographer ethics. General information provided regarding patient preparation, historical/c clinical correlation, and basic nursing care specific to ultrasound. Strong emphasis on terminology and abbreviations most commonly used with ultrasound. (F)

**IMDS 201 - General Sonography I: Abdomen**  
**Prerequisite:** Admission to Diagnostic Medical Sonography Program  
**Co-requisite Courses:** IMDS 200 and IMDS 202 and IMDS 280  
Provides the student with cross-sectional anatomy and pathology as it relates to sonographic scanning of the abdomen, vascular system, thyroid, prostate, scrotum, breast, and neurology of the neonate. (F)

**IMDS 202 - OB/GYN Sonography I**  
**Prerequisite:** Admission to Diagnostic Medical Sonography Program  
**Co-requisite Courses:** IMDS 200 and IMDS 201 and IMDS 280  
Provides the student with cross-sectional anatomy and pathology as it relates to gynecological and obstetrical sonography. Fetal cardiac anatomy and appearance will be presented. (F)

**IMDS 234 - Sonographic Physics**  
**Prerequisite:** IMDS 200 2.5 minimum and IMDS 201 2.5 minimum and IMDS 202 2.5 minimum  
**Co-requisite Courses:** IMDS 265 and IMDS 266 and IMDS 281  
The student will study the fundamental principles of acoustical physics, how sound is produced and manipulated, and how it reacts in various mediums. (Su)

**IMDS 245 - Sonographic Instrumentation**  
**Prerequisite:** IMDS 234 2.5 minimum  
**Co-requisite Course:** IMDS 233  
The student will be introduced to the mechanics of A-Mode, M-Mode, Doppler, and Real-time equipment. Accessory equipment such as the camera, transducer, and cathode ray tube will be presented. Methods of quality assurance will also be presented. (F)

**IMDS 265 - General Sonography II**  
**Prerequisite:** IMDS 201 2.5 minimum  
**Co-requisite Courses:** IMDS 234 and IMDS 266 and IMDS 281  
The student will be presented with the identification of and interpretation of anatomy and pathology on sonographic exams as it relates to the abdomen, vascular system, and small parts. (Sp)

**IMDS 266 - OB/GYN Sonography II**  
**Prerequisite:** IMDS 202 2.5 minimum  
**Co-requisite Courses:** IMDS 234 and IMDS 266 and IMDS 281  
The student will be presented with the identification of and interpretation of anatomy and pathology on sonographic exams as it relates to the obstetric and gynecologic patient. (Sp)

### IMAG - PHOTOGRAPHY TECHNOLOGY

**IMAG 101 - Basic Photog for Non-Majors**  
**Prerequisite:** None  
Students will learn to use camera controls, exposure controls, photographic composition, and lighting to make better photographs. Color film and commercial processing will be used. Designed for students with little or no previous still photography experience who do not plan to major in imaging technology. (F, Sp, Su)

**IMAG 102 - Advanced Photo for Non-Majors**  
**Recommended:** IMAG 101  
A continuation of IMAG 101. Students will learn to apply advanced design concepts, techniques, and accessories for problem solving and creative image making. Color film and commercial processing will be used. For students who do not plan to major in imaging technology. (F, Sp)

**IMAG 111 - Intro to Photographic Tech I**  
**Prerequisite:** Reading Level 3 and Writing Level 2 and Math Level 3  
Introduces students to photographic technology on both a theoretical and practical level. The student will learn camera types and related equipment, exposure controls, beginning and intermediate black-and-white film processing and printing, including contrast controls. This course is the first of a two-course sequence for imaging technology majors. (F, Sp, Su)

**IMAG 112 - Design for Imaging Tech**  
**Prerequisite:** IMAG 101 2.0 minimum or IMAG 111 2.0 minimum or Concurrently  
This course introduces students to design theory and its application to imaging technologies on both a practical and theoretical level. Students will learn and apply design elements and principles to their evolving work. (F, Sp, Su)

**IMAG 113 - Lighting Concepts/Applications**  
**Prerequisite:** IMAG 101 2.0 minimum or IMAG 111 2.0 minimum or Concurrently  
Introduces the student to fundamental lighting concepts encountered in the studio and on location. Students will learn to apply their knowledge by identifying and solving common photogenic lighting problems. Students will use professional continuous and electronic flash equipment to produce acceptable images. (F, Sp, Su)
### IMAG 114 Intro Photographic Color Tech
**Prerequisite:** IMAG 111 2.0 minimum and IMAG 112 2.0 minimum and IMAG 113 2.0 minimum and Reading Level 5 and Writing Level 2 and Math Level 3

Introduces the student to the theories and applications of contemporary color photographic materials and processes. Students will learn to produce acceptable color images by applying the concepts of film selection, film testing, color temperature, lighting, and color image design to their evolving work. (F, Sp, Su)

**IMAG 115 Color Directed Study**
**Prerequisite:** IMAG 114 2.0 minimum or Concurrently

Introduces student to practical applications of contemporary color photographic materials and processes. Student 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 Intro to Photographic Tech II**
**Prerequisite:** IMAG 111 2.0 minimum

Continuation of IMAG 111. Students will learn intermediate and advanced black-and-white exposure, developing, and printing controls and techniques. Students will acquire knowledge and skills to solve technical, aesthetic, and communication problems. Successful completion requires for continuation in the Imaging Technology Program (Still Track) at the 200 level. (F, Sp, Su)

**IMAG 119 Intermediate Lighting**
**Prerequisite:** IMAG 113 2.0 minimum or IMAG 118 2.0 minimum

An exploration of intermediate lighting theories, practices, and techniques. This course emphasizes the use of natural light and electronic flash as applied to people, locations, and advanced studio settings. (F, Sp, Su)

**IMAG 120 Photographic Technology Lab**
**Prerequisite:** IMAG 117 2.0 minimum

Designed for students whose lack of photographic competencies prevent their completion 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**
**Prerequisite:** None

A survey of the imaging technology field, including the role of the imaging professional, materials, processes, and new technology as related to advertising, communications, film/ multimedia, illustration, portrait, and self-expression. Includes an overview of projected employment opportunities in imaging technology. (F)

**IMAG 122 Imaging Technology Forum**
**Prerequisite:** None

Students will learn through demonstration, laboratory experiences, and other direct involvement in imaging technologies. Includes presentations, demonstrations, and workshops that expose students to the current state of development in the areas of hybrid imaging and emerging technologies. (Sp)

**IMAG 201 Topics Commercial Photography**
**Prerequisite:** IMAG 113 2.0 minimum and IMAG 117 2.0 minimum

Exposes students to photography for commercial use. Students will explore various topics, techniques, methodologies, principles, and opinions as applied to commercial 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 Photo Communication**
**Prerequisite:** IMAG 117 2.0 minimum

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 204 Topics in Imaging Self-Express**
**Prerequisite:** IMAG 117 2.0 minimum

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**
**Prerequisite:** ARTS 171 2.0 minimum

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**
**Prerequisite:** IMAG 117 2.0 minimum

Designed for intermediate and advanced students to enhance their competencies and knowledge in the area of currently available image output technologies. (F, Sp, Su)

**IMAG 207 Imaging Issues**
**Prerequisite:** IMAG 117 2.0 minimum or IMAG 118 2.0 minimum

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**
**Prerequisite:** IMAG 117 2.0 minimum

Designed for intermediate and advanced students to enhance their competencies and knowledge in the area of currently available image input and creation technologies. (F, Sp, Su)

**IMAG 210 Intermediate Color Ap and Tech**
**Prerequisite:** IMAG 114 2.0 minimum and IMAG 117 2.0 minimum

Introduces the student to the contemporary materials and processes of the negative to positive color photographic print process. Students will learn to produce professionaly 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 211 Advanced Color Appl and Tech**
**Prerequisite:** IMAG 210 2.0 minimum (previously IMAG 222)

A continuation of IMAG 210 that involves the advanced student with color as a critical communication tool. Students, individually and as team members, will learn to produce highly effective and professionally acceptable photographs with color transparency film. A high level of technical accomplishment and aesthetic development will be reached. (F, Sp)

**IMAG 220 Intermed Still Imaging Tech**
**Prerequisite:** IMAG 114 2.0 minimum and IMAG 117 2.0 minimum and (IMAG 210 2.0 minimum (previously IMAG 222) or Concurrently)

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 Tech**
**Prerequisite:** IMAG 220 2.0 minimum and IMAG 211 2.0 minimum (previously IMAG 223) or Concurrently

Introduces students to techniques and practices 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 224 Emerging Image Technologies I**
**Prerequisite:** IMAG 114 2.0 minimum and (IMAG 117 2.0 minimum or IMAG 118 2.0 minimum)

An intermediate-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**
**Prerequisite:** IMAG 224 2.0 minimum

An advanced-level study that further explores the effects of new technologies and processes on the areas of photography and imaging. (Sp)

**IMAG 228 Independent Study**
**Prerequisite:** IMAG 117 2.0 minimum or (IMAG 225 2.0 minimum and IMAG 227 2.0 minimum and Approved Proposal)

Allows advanced students to pursue study in areas not formally taught within the curriculum. Students will work in consultation with an instructor. Acceptable with ten proposal required prior to registration. (F, Sp, Su)
IMAG 229 Advanced Imaging Applications
Prerequisite: IMAG 112 2.0 minimum or IMAG 225 2.0 minimum and
IMAG 227 2.0 minimum and Approved Proposal
Allows advanced students to work on improving skills or to enhance skills in an
area of strength or interest. Students will work with an instructor in a directed
learning experience. Acceptable written proposal required prior to registration.
(F, Sp, Su)

IMAG 230 Imaging Technology Major I
Prerequisite: IMAG 221 2.0 minimum and IMAG 211 2.0 minimum
(previously IMAG 223) or IMAG 226 2.0 minimum and
IMAG 227 2.0 minimum
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 refining technical, aesthetic, and communication skills. Students will
create professional quality images that may be included in the portfolio which is
required for graduation. (F, Sp, Su)

IMAG 231 Imaging Technology Major II
Prerequisite: IMAG 230 2.0 minimum or IMAG 226 2.0 minimum and
IMAG 227 2.0 minimum
A continuation of IMAG 230. Continued emphasis on problem solving, critical
thinking, and refining technical, aesthetic, and communication skills. Students will
create professional images that may be included in the portfolio which is
required for graduation. (F, Sp, Su)

IMAG 232 Internship
Prerequisite: IMAG 112 2.0 minimum or IMAG 225 2.0 minimum and
IMAG 227 2.0 minimum and Department Approval
Allows advanced students to work as an intern developing competencies in the
technical, business, creative, and communicative aspects of photography, film
making, or electronic imaging. Acceptable written application and internship
agreement required prior to registration. (F, Sp, Su)

IMAG 233 The Business of Photography
Prerequisite: IMAG 112 2.0 minimum and IMAG 117 2.0 minimum
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, Su)

IMAG 234 Portfolio Assembly/Degree Comp.
Prerequisite: IMAG 211 2.0 minimum (previously IMAG 223) and
IMAG 221 2.0 minimum or Concurrently
Concluding course for photo program associate degree. Finalizes the student's
portfolio and prepares the student for the professional photography career. Students will
work on assembling 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 236 Project Lab Independent Study
Prerequisite: IMAG 117 2.0 minimum or IMAG 226 2.0 minimum and
IMAG 227 2.0 minimum and Approved Proposal
Allows advanced students to pursue study in areas not formally taught within the
curriculum when these students 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
Prerequisite: IMAG 117 2.0 minimum or IMAG 226 2.0 minimum and
IMAG 227 2.0 minimum and Department Approval
Allows advanced students to work as interns developing competencies in the tech-
nical, business, creative, and communicative aspects of photography, film making,
or electronic imaging. Acceptable written application and internship agreement
required prior to registration. (F, Sp, Su)

INAU 100 Intro Industrial Automation
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 200 Applied Automation
Prerequisite: ELTE 122 2.0 minimum
Provides experience in the operation, programming and set up of automated
industrial equipment, including robots, vision equipment and industrial software.
(F)

INSU 121 Property Liability Ins Prin
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
Prerequisite: None
This course will cover the basic personal loss exposures and how they can be met
through insurance such as automobile, homeowners, 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
Prerequisite: None
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 excel, and surplus
line coverage. (F, Sp)

INSU 265 Principles Risk and Insurance
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 100 Interior Design Fundamentals
Prerequisite: Reading Level 3 and Writing Level 2
Practical survey course for residential interior design and decoration. Topics
include planning, selecting and arranging of furnishings; scheduling and budgeting;
and color schemes and identification of furniture styles as they relate to the
selection and coordination of home furnishings and accessories. (F, Sp)

INTR 106 Interior Graphic Standards
Prerequisite: None
Recommended: Math Level 4
Students will learn how to draw floor plans, interior elevations and axonometric
drawings using manual drafting techniques. Topics include drafting equipment,
media, reproduction methods, lines, symbols, lettering, orthographics and
sketching. (F, Sp)

INTR 110 Applied Color Design/Theory
Prerequisite: None
Recommended: Reading Level 3 and Writing Level 2
A studio course in basic design theory. Topics include two- and three-dimensional
design fundamentals, elements and principles of design, color, creativity and prob-
lem solving as they relate to interior design. (F, Sp)

INTR 132 Interior Illustration
Prerequisite: None
Recommended: INTRO 106 2.0 minimum or Equivalent
This course is the study of three-dimensional visual and oral presentation tech-
niques. Students will create perspective drawings and color renderings using a
variety of media. (Sp)

INTR 140 Interior Drafting/Detailing
Prerequisite: None
Recommended: INTRO 106 2.0 minimum or Equivalent
Students will learn drafting techniques for interior design including floor plans, eleva-
tions, sections, axonometrics, cabinetry, and furniture detailing. Emphasis on
developing residential construction documents for kitchens. (F)
INTR 151  Computer-Aided Kitchen Design  
Prerequisite: None  
Recommended: INTR 106 or ARCH 100 and Windows or Keyboarding  
This course is an in-depth study of kitchen planning, design, and remodeling through computer software applications. Lecture/Lab (F, Sp, Su)  

INTR 170  Intro to Interior Design  
Prerequisite: Reading Level 5 and Writing Level 4  
Recommended: INTR 100.2.0 minimum or Concurrently or Equivalent  
This course is a survey study of the basic knowledge required for the education of the professional interior designer. Human needs are the focal point of solving problems of space planning and furniture arrangement. Students will use the elements and principles of design to evaluate function and aesthetics of interior spaces. (F, Sp)  

INTR 175  Interior Space Planning  
Prerequisite: None  
Recommended: INTR 100.2.0 minimum or INTR 106.2.0 minimum  
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 visual presentation. Lecture/Lab (Sp)  

INTR 190  Interior/Materials/Equipment  
Prerequisite: None  
Recommended: INTR 106 or ARCH 106 or Equivalent  
Study of nonstructural interior finishes and materials, their methods of application and installation, and their effect on the environment. Students will study kitchens, bathrooms, cabinets, ceilings, walls, floors, and paint. (Sp)  

INTR 201  Cultural Diversity in Housing  
Prerequisite: Reading Level 5 and Writing Level 6  
This interdisciplinary 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  CADD for Interiors  
Prerequisite: None  
Recommended: INTR 140 and INTR 151 and CNCP 101  
This first course in a series of three introduces students to the basic principles of computer-aided drafting and design. Students use computer software to create and print one and two dimensional interior design drawings with dimensions and notes. Students are expected to have college drafting experience and computer literacy. (F, Sp)  

INTR 225  CADD for Space Planning  
Prerequisite: None  
Recommended: INTR 222 or Equivalent  
This second course in a series of three is the study of advanced computer-aided drafting and design applications. Manufacturers' furniture symbols will be used to create interior design and space planning drawings with systems furniture. (Sp)  

INTR 230  World Decorative Arts  
Prerequisite: None  
Recommended: Reading Level 5 and Writing Level 4  
This course is a survey of the decorative arts of the world including furniture, interior architecture, textiles, and accessories. Students will study designers, styles, materials and techniques and their influence upon the political, geographical, economic and religious cultures of Africa, Asia, Europe and the Americas. Period is from antiquity to seventeenth century. (F)  

INTR 231  Period Interiors  
Prerequisite: None  
Recommended: Reading Level 5 and Writing Level 4  
This course is a study of the decorative art periods including furniture, interior architecture, textiles, and accessories from the 17th century to the 20th century. (Sp)  

INTR 232  Twentieth Century Interiors  
Prerequisite: None  
Recommended: Reading Level 5 and Writing Level 4  
This course is a selective survey of interior design covering the history and philosophy of modern and international styles from the turn of the century to the 1990s. Student projects will include a colored sketchbook. (F, Sp)  

INTR 240  Fundamentals of Lighting  
Prerequisite: None  
Recommended: INTR 106.2.0 minimum or ARCH 100.2.0 minimum or Equivalent  
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, environmental systems, heating, cooling and solar passive. (F)  

INTR 244  3-D Visual Display Studio  
Prerequisite: None  
Recommended: INTR 110 and INTR 132 and INTR 170  
Students will study interior design and lighting in three-dimensional spaces and apply the principles and elements of design within an existing building context or create a new space such as a kiosk. Students will communicate with their solutions using floor plans, elevations, reflected ceiling plans, color rendered perspectives and axonometric. (F)  

INTR 246  Residential Interiors Studio  
Prerequisite: None  
Recommended: Minimum 2.0 in INTR 132 and INTR 175 and INTR 190 and INTR 240  
This course examines the relationship of human needs to interior environmental design with emphasis on alternative housing design. (Sp)  

INTR 248  Non-Residential Interiors Studio  
Prerequisite: None  
Recommended: Minimum 2.0 in INTR 175 and INTR 240 and ARCH 122 and (INTR 261 Concurrently)  
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, and lighting and building codes, and barrier-free space planning with the use of systems furniture and computer-aided planning programs. (F)  

INTR 252  Codes and Specifications  
Prerequisite: None  
Recommended: INTR 248.2.0 minimum  
This course is the study of codes and procedures of working drawings, interior materials, cost estimating, installation standards for furniture, cabinets and shop drawings, floor coverings, wall coverings, and window treatments. Emphasis is on furniture, fixture and equipment selection and specifications. (Su)  

INTR 254  Certification Review  
Prerequisite: None  
This course is specifically intended to prepare interior design students with appropriate information plus practical exercises which will enable them to prepare for the National Council for Interior Design Qualification Examination. (F, Sp, Su)  

INTR 256  Interior Professional Practice  
Prerequisite: None  
Recommended: Second Year Interior Design Students  
This course is an in-depth study of the business and professional practices of interior designers. Students prepare written communications, contract forms, and schedules. The study of marketing, ethics, and project management are included. For the final project, students prepare a project control book. (F)  

INTR 260  3-D CADD for Interiors  
Prerequisite: None  
Recommended: INTR 132 and INTR 222 or Equivalent  
This course is the third course in a series in the study of computer-aided drafting and design applications for interior design. Students will learn how to create 3D models, wire frames, and surfaces. (F)  

INTR 261  Interiors Project Laboratory  
Prerequisite: Department Approval  
Restriction: Interior Design Majors  
Recommended: INTR 222  
This course is a directed study of special projects not incorporated in regular course offerings. (F, Sp, Su)  

INTR 263  Interior Design Internship  
Prerequisite: Department Approval  
Restriction: Interior Design Majors  
Recommended: INTR 250.2.0 minimum and GPA 2.5 and 30 credits completed in INTR  
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. (F, Sp, Su)
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INTR 270 Interior Design Portfolio
Prerequisite: None
Restriction: Interior Design Majors
Recommended: INTR 132 and INTR 256 and INTR 263
The portfolio course is an opportunity for students to organize photographs, mustertakes, and display their visual works. At the completion of the course, the students will have developed a portfolio for a portfolio. (Sp)

IRXT - RADIOLOGIC TECHNOLOGY

IRXT 100 Introduction to Imaging
Prerequisite: Admission to Radiologic Technology Program
This course surveys the role of the radiographer in the health care industry. Explores the historical development of X-ray, medical, and legal ethics, radiation protection, patient-staff relationships, and other imaging technologies. A clinical component allows the new radiography student to correlate this material in the practical setting. (F)

IRXT 111 Radiographic Positioning I
Prerequisite: Admission to Radiologic Technology Program
Student radiographers are introduced to radiographic positioning of the upper and lower extremities, chest, abdomen, bony thorax, pelvis, and spine. Associated topographic, skeletal, chest, and abdominal anatomy is studied. A laboratory experience is provided to evaluate the student skills in performing each position/projection. (F)

IRXT 112 Radiographic Positioning II
Prerequisite: IRXT 111 2.5 minimum
A continued study of routine radiographic positioning with the addition of fluoroscopic procedures. Included are skull of the skull, G.I. tract, g.I. tract, myelography, and bronchography. In addition, various contrast media are studied. Laboratory experiences are provided to evaluate student skills in performing selected positions/projections. (Sp)

IRXT 113 Additional RAD Procedures
Prerequisite: IRXT 112 2.5 minimum
Special radiographic procedures are studied and some related imaging modalities surveyed. Procedures include neurologic, cardiovascular, arthrographic, mammographic, digital imaging, and tomographic studies. (Su)

IRXT 114 Cross-Sectional Anatomy
Prerequisite: IRXT 113 2.5 minimum
Provides an overview of transverse, coronal, and sagittal sectional anatomy of the human body. Special emphasis is placed on a study of the head and brain, thorax, abdomen, and pelvis. The shoulder, elbow, hip, and knee are also examined. Correlations between cadaver cross-sections, CT's, MRIs and radiographs are explored. (Sp)

IRXT 121 Radiographic Exposure I
Prerequisite: Admission to Radiologic Technology Program
The formation of the radiographic image is the focus of IRXT 121. Photographic and geometric variables are related to radiographic factors and their various interactions compared and contrasted. Finally, a study of the history of radiology, basics of radiation formation, and anatomy of the X-ray tube are discussed. (Su)

IRXT 122 Radiographic Exposure II
Prerequisite: IRXT 121 2.5 minimum
Various beam modifying devices are presented and their relation to formation of a radiographic image studied. Includes a study of manual processing and the theory of image formation. Dark room procedures, quality control, both radiographic and photographic, will also be explored. (Su)

IRXT 131 Radiologic Physics
Prerequisite: IRXT 122 2.5 minimum and MATH 112 2.5 minimum
Basic principles of electricity and the operation of the X-ray circuit are presented. Finally, advanced topics regarding the formation of radiation, protection of the X-ray tube, and X-ray attenuation are studied. (F)

IRXT 132 Radiobiology and Protection
Prerequisite: IRXT 131 2.5 minimum
This course focuses on the rationale for good radiation hygiene and methods to protect the patient and technologist. Current theories regarding the physiological effects of radiation are explored. (Sp)

IRXT 200 Intro/Radiologic Pathology
Prerequisite: None
Emphasizes how disease processes are diagnosed radiographically and the relationship of the radiographic appearance of the disease to its anatomic, physiologic, and pathologic characteristics. The etiology, treatment, and resolution of each disease is discussed with an attempt to relate more recent advances in those areas. (F)

IRXT 202 Clinical Practice I
Prerequisite: IRXT 111 2.5 minimum
First in a two-semester sequence of clinical application in radiography. The course is programmed with specific performance activities. Credit is arranged for each individual student with a ratio of one credit hour to three clinical clock hours. The ratio for lecture is consistent with the one-to-one ratio. (Sp)

IRXT 204 Clinical Practice II-S
Prerequisite: IRXT 202 2.5 minimum
Second course in a two-semester sequence of clinical applications in radiography. The course is programmed with specific performance activities. Credit is arranged for each individual term with a ratio of one credit hour to three clinical clock hours. The ratio for lecture is consistent with the one-to-one ratio. (Su)

IRXT 210 Radiology Career Management
Prerequisite: None
Designed to acquaint the student with the organization, function, supervision, and financial arrangements relative to departments of radiology, basic X-ray equipment for performing preventive maintenance, and detecting simple functioning difficulties. (F)

IRXT 214 Comprehensive Experience I
Prerequisite: IRXT 204 2.5 minimum (previously IRXT 233) or IRXT 213 2.5 minimum
First in a three-semester sequence of clinical application in radiography. Clinical experience is provided under the direct supervision of an ARRT Registered Radiologist. Clinical competencies will be given corresponding to completed didactic work. Performance standards are used to evaluate the student progress. (F)

IRXT 215 Comprehensive Experience II
Prerequisite: IRXT 214 2.5 minimum
Second in a three-semester sequence of clinical application in radiography. Clinical experience is provided under the direct supervision of an ARRT Registered Radiologist. Clinical competencies will be given corresponding to completed didactic work. Performance standards are used to evaluate the student progress. (Sp)

IRXT 219 Imaging Update
Prerequisite: IRXT 132 2.5 minimum
This course will provide the advanced imaging student with an update of positioning, exposure, and physics. In addition, the use of a comprehensive test will assess the student's level of knowledge in the imaging technology. (Su)

IRXT 236 Comprehensive Experience III-S
Prerequisite: IRXT 215 2.5 minimum
Third in a three-semester sequence of clinical applications in radiography. Clinical experience is provided under the direct supervision of an ARRT Registered Radiologist. Clinical competencies will be given corresponding to completed didactic work. Performance standards are used to evaluate the student progress. (Su)

ISCI - INTEGRATED SCIENCE

ISCI 110 Science Discovery: A Process
Prerequisite: Reading Level 3 and Writing Level 2 and Math Level 3
Emphasizes reducing anxiety and improving reasoning skills necessary for participation in science courses. Methods to identify and reduce anxiety associated with science topics are presented. Science reasoning skills will be inventoried, including observation, experimental techniques, critical thinking, and communication. (F, Sp)

ISCI 121 Integrated Sci for Education I
Prerequisite: Reading Level 5 and Writing Level 4 and Math Level 4
The first of two general science courses focusing on the fundamental behavior of matter and energy using a historical and environmental context. Science processes, methods, and reasoning skills are emphasized throughout. Recommended for education majors. (F, Sp)
ISCI 122  Integrate Sci for Education II  4
Prerequisite: ISCI 121 2.0 minimum and Reading Level 5
The second of two general science courses focusing on the biological and ecological nature of our universe, using a historical and integrative approach. Science processes, methods, and reasoning skills are emphasized throughout. Recommended for education majors. (F, Sp)

JAPN 115  JAPANESE

JAPN 115  Conversational Japanese I  3
Prerequisite: None
First course in conversational Japanese. Designed for people with little or no knowledge of Japanese who wish to acquire conversational skills. Students learn correct pronunciation, basic sentence structures, and practical vocabulary for everyday use and travel. Selected features of Japanese culture and everyday life in Japan will be introduced. (F, Sp, Su)

JAPN 116  Conversational Japanese II  3
Prerequisite: None
Recommended: JAPN 115 or Equivalent
Second course in conversational Japanese. Designed for people with some prior knowledge of Japanese who wish to improve their conversational skills. Students learn practical vocabulary and essential grammar to converse in Japanese. Selected features of Japanese culture and everyday life in Japan will be introduced. (F, Sp)

JAPN 121  Elementary Japanese I  4
Prerequisite: Reading Level 5
First course of a two-semester sequence in elementary Japanese. Designed to provide students with basic knowledge of Japanese for practical communication and skills in speaking, reading, writing, and listening comprehension. Provides information concerning everyday life and culture of Japan. Hiragana and Katakana syllabaries and 40 Kanji will be introduced. (F, Sp, Su)

JAPN 122  Elementary Japanese II  4
Prerequisite: JAPN 121 1.5 minimum and Reading Level 5
Second course of a two-semester sequence in elementary Japanese. Students receive more practice in Japanese for practical communication. Develops speaking, reading, writing, and listening skills. Previously acquired knowledge and skills are refined and ability to communicate in Japanese is increased. Additional 100 Kanji will be introduced. Class is taught mostly in Japanese. (Sp)

JAPN 201  Intermediate Japanese I  4
Prerequisite: JAPN 122 1.5 minimum and Reading Level 5
First course of a two-semester sequence in intermediate Japanese. Includes introduction of more advanced grammar, vocabulary building, composition, group discussions, and more information on Japanese culture and everyday life. Additional 150 Kanji will be introduced. (F)

JAPN 202  Intermediate Japanese II  4
Prerequisite: JAPN 201 1.5 minimum and Reading Level 5
Continuation of Japanese 201. Includes more advanced grammar, intensive vocabulary building, writing composition, reading contemporary materials, discussions, and students' presentations of Japanese language or culture. Additional 150 Kanji will be introduced. Natural and practical communication will be emphasized. Class is taught in Japanese. (Sp)

JRNL 151  JOURNALISM

JRNL 151  Newswriting and Reporting  3
Prerequisite: None
Recommended: Computer and/or Keyboarding Experience
Introduction to, and practice in, writing news stories. Students learn news terminology, style, objectivity, attribution, accuracy, and copy-editing skills. Basic news gathering and reporting techniques are presented and practiced. (F)

JRNL 254  Editorial Writing  3
Prerequisite: JRNL 151 2.0 minimum or WRIT 121 2.0 minimum or WRIT 131 2.0 minimum
Recommended: Computer and/or Keyboarding Experience
A course in how to write effective editorials. Students analyze content, structure and style of editorial models, learn methods of finding subjects, learn methods of research, and write editorials and articles on important issues. (F)

LABR 200  LABOR RELATIONS

LABR 200  Intro to Labor Relations  3
Prerequisite: None
This course surveys both historical and legal frameworks of the labor movement. Major labor laws, causes and goals of the labor movement, and union structure and behavior will be discussed. Students will explore both labor and management approaches to solving employment disputes. (F, Sp, Su)

LABR 201  Labor Negotiation/Contract Admin  3
Prerequisite: None
Recommended: LABR 200 or Related Work Experience
This course covers key aspects of negotiating and applying collective bargaining agreements including: labor negotiations; contract administration; and grievance processing and arbitration. Hands-on course covers basic knowledge, legal framework, and practical skills pertaining to negotiations and grievance adjudication. (F)

LABR 203  Labor Law  3
Prerequisite: None
Recommended: LABR 200 or Related Work Experience
An in-depth study of traditional labor law including: 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  3
Prerequisite: None
This course provides an introduction and overview to the principles and application of laws affecting the workplace, not including traditional labor relations law. Areas of law covered include discrimination, wage-hour, unemployment benefits, personal records, and common law issues relating to discharge and other matters. (F, Sp)

LAND 100  LANDSCAPE

LAND 100  Intro to Landscape Drafting  2
Prerequisite: None
This course covers the use of drafting equipment with an emphasis on lettering, line convention, and title blocks. The students will develop a basic format for design construction drawings. The course provides essential drafting skills for beginning the Landscape Program. (F, Sp, Su)

LAND 101  Landscape Special Topics  25
Prerequisite: None
The Landscape Special Topics series will feature topics related to the green industries. The lectures will allow students to sample and explore a variety of topics related to plant materials, landscape design and construction principles. Topics will range from water gardens and bonsais to rose gardens and herbs. (F, Sp)

LAND 103  Landscape Design Workshop Series  25
Prerequisite: None
The Landscape Design Workshop Series will feature topics related to the green industry. The workshop format allows for hands-on participation on the particular topic area. Participants can explore topics from wreath making to terrarium construction. (F, Sp)

LAND 120  Basics/Landscape Contracting  3
Prerequisite: None
This course will explore the field of landscape contracting and its relationship to landscape architecture and management. Landscape contractors and their role in plan evaluation, landscape material selection and their installation and construction features will be fully analyzed. The role of the individual in the design/build industry will be highlighted. (F, Sp)

LAND 130  Interior Landscaping  3
Prerequisite: None
This course includes the identification, culture, placement, and use of foliage and flowering plants in the office, mall, restaurant or home. Basic principles of landscaping are covered to include soil media, watering, light requirements, fertilizer, and insect disease control. Management in relation to the plants' placement and use within the interior landscape is also discussed. (Sp)
LAND 132 Residential Landscaping
Prerequisite: None
This course highlights a basic design process approach for developing a home landscape. The development of a basic design focusing on your own home including placement of plant material, decks, patios, water features, and other landscape elements will be demonstrated. A course for the new homeowner, homeowner renovating his or her landscape, residential landscaper, or nursery person. (F, Sp, Su)

LAND 133 Home Landscape Maintenance
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
Prerequisite: None
This course emphasizes identification of both common and uncommon deciduous trees, shrubs, evergreens, vines, and ground covers used in the landscape trade. Weekly lab walks facilitate development of field identification skills based on form, foliage, bark, bud, flower, and fruit characteristics. Landscape use and basic culture of individual plants are also covered. (F, Su)

LAND 141 Flowering Trees, Shrubs, Vines
Prerequisite: None
This course explores spring flowering trees, shrubs, broadleaf evergreens, and ground covers. Identification of the field is emphasized during weekly lab walks. Design characteristics of individual plants including size, habit, flowers, fruit, bark, foliage, and buds are discussed as well as basic cultural requirements. (Sp, Su)

LAND 142 Perennials/Annual Flower Plants
Prerequisite: None
This course covers the identification and basic culture of approximately 170 perennial and annual flowering and bedding plants. Specific features of each plant will be discussed in relation to their proper landscape use. Herbs, grasses, and rock and water garden plants will also be highlighted. (Sp, Su)

LAND 145 Field Exper Landscape Arch
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 Arch
Prerequisite: None
Students will explore the broad scale philosophical, historical, and technical aspects of landscape architecture. Basic problem-solving techniques and design theory are introduced along with implementation of the design process. (F, Sp, Su)

LAND 152 Landscape Graphics Comm-Begin
Prerequisite: LAND 150 2.0 minimum or Concurrently
This course explores basic illustration techniques relative to the field of landscape architecture. Both the formal and informal applications of mechanical and freehand drafting communication are emphasized to include reproduction printing methods. (F, Sp, Su)

LAND 153 Landscape Graphics Comm-Adv
Prerequisite: LAND 152 1.0 minimum
This course acquaints the student with visual presentation techniques used in landscape architecture. Plan, section, and three-dimensional graphics are explored using a range of media. The students will develop sketching and mechanical-drafting techniques for the preparation of professional graphic presentations. (Sp)

LAND 160 Planting Design I
Prerequisite: LAND 140 1.0 minimum and LAND 150 1.0 minimum or Concurrently
This course provides an overview of the planting design principles from site analysis to construction documents. Planting design principles are emphasized as well as practical aspects of plant selection and design implementation in a range of design situations. Contemporary issues concerning today's design and construction industries are also discussed. (F)

LAND 161 Planting Design II
Prerequisite: LAND 160 1.0 minimum
This course applies the planting design skills gained in LAND 160 to a broad range of sites and issues typically encountered in today's landscape design and construction industries. Topsoil covered include functional uses of plants, native plant material, and planting design in the urban environment. (Sp)

LAND 163 Designing Ornamental Gardens
Prerequisite: LAND 141 1.0 minimum or Concurrently
This course is a practical approach to designing the herbaceous garden. Annuals, perennials, herbs, and ornamental grasses are analyzed to create a design that will be in harmony with its environment. Color, height, texture, form, and fragrance are some of the plant's characteristics which will be discussed. (F, Sp)

LAND 164 Site Design
Prerequisite: LAND 150 2.0 minimum
This course emphasizes use of the design process to solve a variety of urban and nonurban site planning problems. Project design solutions require graphic delineation stressing plan view presentations. A variety of drawing scales, graphic materials, and techniques will be explored. (F)

LAND 170 Site Grading I
Prerequisite: LAND 150 2.0 minimum
This course covers basic through advanced principles, methods, and procedures for grading a site. Use of contour lines, land form interpretation, and earthwork computation are studied and applied to problem solving for both typical and special requirement sites. (F)

LAND 171 Site Grading II
Prerequisite: LAND 170 2.0 minimum
This is an advanced site-grading course that builds on the skills gained in LAND 170. This Michigan Soil Erosion Control Act is emphasized with respect to the required goals for circulation systems and recreational and utility facilities. (Sp)

LAND 172 Site Layout
Prerequisite: LAND 171 2.0 minimum or Concurrently
This course covers plan dimensioning and layout techniques for vehicle and pedestrian circulation systems, building locations, utilities, and sporting and recreational facilities. Professional graphic techniques are emphasized. (Sp)

LAND 180 Landscape Ecology
Prerequisite: None
This course is for the professional as well as the interested individual covering the relatively new field of landscape environments. Develop a basic understanding of landscape communities, how they developed, and how they function. Plant communities, native species, natural design, and environmental impact are some of the topics covered. (F, Sp)

LAND 181 Landscape Restoration/Manage
Prerequisite: None
Recommended: LAND 180
This course will cover the detailed steps necessary to complete a total restoration of a damaged ecosystem. Specific system designs dealing with wetlands and prairies in particular will be highlighted. Specific native plants, animals, and insects will be discussed. Field experiences and native plant identification are a critical part of this course. (Sp)

LAND 182 Wetland Delineation/Evaluation
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 guide line for this class. Certification credits can be earned by taking this course. (F, Sp)

LAND 183 Planned Wetlands Eval/Restorat
Prerequisite: None
This course will discuss goals which are desirable for designing planned wetlands, constructed, restored or enhanced with specific targeted functions in mind. The class will focus on assessment of wetland functions during the design process and tools available to accomplish this. Wetland design, restoration, evaluation, and management will also be discussed. (F, Sp)
LAND 185 Arboriculture (Urban/Forestry) 3
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, tracing, and fertilizing will be offered. (F, Sp)

LAND 195 Irrigation Design and Manage 3
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, drip, and golf course. (Sp)

LAND 220 Wetland Restoration 5
Prerequisite: None
This course will present current information available from the MDNR, EPA, and Army Corp of Engineers as it relates to wetland regulations and policy. Wetland delineation, mitigation, design, construction, and planting will be highlighted. Restoration enhancement and creation of wetlands will be outlined and developed. (F, Sp, Su)

LAND 222 Landscape Construct Tech Begin 3
Prerequisite: None
This course will deal with the basic concepts needed to operate as a landscape contractor in the design/build industry. The fundamentals of landscape design evaluation, development of materials lists, and cost takeoffs will be demonstrated. Basic site analysis, site survey, drainage and grading techniques will be demonstrated. (F, Sp)

LAND 225 Landscape Cost Estimation 3
Prerequisite: None
This course is an introduction to the study of landscape contracting and the cost estimating process. The class covers the project management process and the costing factors associated with it. The areas of material costs, equipment cost, labor costs, and related management charges will be evaluated. The preparation of bids and the bidding process will be highlighted. (F, Sp)

LAND 222 Professional Res. Land Design 3
Prerequisite: LAND 120 2.0 minimum
This course is designed for the individual interested in residential and small commercial design projects on a professional scale. Several design problems will be presented and detailed projects will be developed. (F, Sp, Su)

LAND 233 Grounds Management 3
Prerequisite: None
The student will evaluate a landscape design and/or specific site plan with total management of the site in mind. Seasonal management such as pruning, transplanting, pesticide applications and fertilization as well as cost evaluations will be based on commercial and office sites. This course is for the professional grounds manager. (F, Sp)

LAND 242 Ecological Land Planning 3
Prerequisite: None
This course will introduce the student to the land planning process. The ecological method of land planning will be emphasized with projects demonstrated. Field trips to planning meetings and project sites will be an integral part of this course. (F, Sp)

LAND 250 Landscape Construction Methods 3
Prerequisite: LAND 120 2.0 minimum
This course examines the properties and uses of concrete, asphalt, masonry, wood, and other landscape construction materials. Basic design and installation methods of landscape structures are emphasized in addition to the introduction of professional construction drafting techniques. (F)

LAND 252 Landscape Construction Details 3
Prerequisite: LAND 250 2.0 minimum
Focuses on graphic techniques for drawing construction details and coordination of details with site plan layout. Studies detailing utilities, irrigation systems, circulation systems, recreational facilities, and various construction features. Design-build procedures are stressed, including materials tabulation and cost estimating. (Sp)

LAND 276 Landscape Documents and Spec 2
Prerequisite: LAND 164 2.0 minimum
This course explores the relationship and principles between specifications and working drawings. The cost of projects as well as bid preparations will be highlighted. The student will prepare bids, write specifications, and participate in a class bid opening. (F)

LAND 281 CAD Basics in Landscape Design 1
Prerequisite: None
This basic introduction to computer-based landscape design software packages will include basic computer concepts related to landscape drafting and design principles. Hands-on computer exercises will feature landscape modules of site design and selection. (F, Sp, Su)

LAND 282 Computer Draw/Design Land Arch 3
Prerequisite: None
This course assumes no previous computer experience. A beginning class for the individual interested in computers and what they can do for you in landscape design, maintenance, construction, plant selection, land survey, and cost estimating. AutoCAD will be surveyed and utilized for the computer-aided drafting and design portion of this course. (F, Sp, Su)

LAND 283 Beginning LANDCAD 3
Prerequisite: LAND 282 2.0 minimum
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 Advanced LANDCAD 3
Prerequisite: LAND 282 2.0 minimum
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 Computer Landscape Animation 3
Prerequisite: LAND 282 2.0 minimum
This course will familiarize the student with the animation aspects of computer design and presentation. The student will learn to produce an animation project using the latest computer technology. Students will also become familiar with the integration of video and animation in various applications. (Sp)

LAND 286 LANDCAD: Photo Imaging 3
Prerequisite: None
Recommended: LAND 282
This computer course will cover how to use photo-imagery and animation in a landscape design situation by way of lecture, video, and computer usage. Computer painting as well as imaging will be demonstrated. Various software will be utilized. (F, Sp)

LAND 288 Beginning Site Designer CAD 3
Prerequisite: None
This course provides an introduction to the Site Designer computer design software. The class presents the site planning module as well as topography, plant selection, landscape construction, and rendering. All modules will be presented and several design projects will be completed. No previous computer experience necessary. (F, Sp, Su)

LAND 289 Land Computer Design/Studio 3
Prerequisite: LAND 282 2.0 minimum
This course involves the use of computer animation presentation software in the three-dimensional arena. Various 3-D presentation software will be utilized to create graphic animations and presentations. (F, Sp)

LAND 295 Landscape Project Lab 1-4
Prerequisite: Department Approval
This project lab is designed for students who wish to pursue a specialty area in landscape architecture beyond that which is offered in our curriculum. Inquiry through research and design of landscapes is required. (F, Sp, Su)
LEGL 115  Legal Assistant Career/Ethics  
Prerequisite: Reading Level 5 and Writing Level 6 and Department Approval. Introduction to the legal assistant's role in the legal system, including essential skills used in the litigation process and law practice. Introduces student to legal terminology, legal analysis, procedural, and substantive law. Surveys paralegal employment and regulation. 2.0 minimum required to continue program. (F, Sp, Su)  

LEGL 120  Legal Research  
Prerequisite: LEGL 115 2.0 minimum  
Recommended: LEGL 215  
Introduces research procedures and resources for finding federal and Michigan law, using digests, encyclopedias, reporters, statutes, court rules, treatises, administrative publications, citation, etc. Students complete research assignments utilizing the publications, and the assignments must be completed using the Michigan Uniform System of Citation. Some classes may be at off-campus libraries. (F, Sp)  

LEGL 121  Legal Writing  
Prerequisite: WRIT 121 1.0 minimum or Writing Level 9 and LEGL 115 2.0 minimum and (LEGL 120 1.0 minimum or Concurrently)  
Recommended: LEGL 215  
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 150  Critical Thinking in Law  
Prerequisite: None  
This course strongly emphasizes the "learn-by-doing" approach, specifically by utilizing group dynamics. The panorama of thinking skills, particularly those relevant in law and criminal justice, will be examined and practiced. Innovative evaluation skills, both personal and group, are a regular part of each session. (F, Sp)  

LEGL 210  Litigation Procedures  
Prerequisite: LEGL 115 2.0 minimum  
Recommended: LEGL 215  
Provides in-depth study of pre-trial, trial, and post-trial practice and procedure. Emphasizes Michigan and federal rules of court. Detailed study of drafting pleadings, discovery procedures, and case preparation for trial and appeal. Also covers evidentiary rules as they relate to trial practice and preparation. (F, Sp, Su)  

LEGL 211  Torts Law  
Prerequisite: LEGL 115 2.0 minimum  
Recommended: 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  Bus Law I, Basic Principles  
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, via self-paced Computer Managed Learning (C.M.L.) or via the Virtual College (V.C.). (F, Sp, Su)  

LEGL 216  Bus Law II, Commercial Law  
Prerequisite: LEGL 215 1.0 minimum  
An in-depth analysis of the Uniform Commercial Code allows students to explore the law of sales, commercial paper, secured transactions, banking, insurance, and debtor-creditor rights. Taught in traditional classroom style or via self-paced Computer Managed Learning (C.M.L.). (F, Sp, Su)  

LEGL 217  Bus Law III, Business Organize  
Prerequisite: LEGL 215 1.0 minimum  
Introduces basic business organizations, including agency law, partnerships, sole proprietorships, and corporations. Additionally, the course will delve into governmental regulation of business, real estate, wills, trusts, and estates. Taught in traditional classroom style or via self-paced Computer Managed Learning (C.M.L.). (F, Sp)  

LEGL 219  Litigation Specialties  
Prerequisite: LEGL 211 1.0 minimum  
Covers several specialty areas of law, for example personal injury, professional malpractice, products liability, workers' compensation, and no-fault auto insurance. Emphasizes role of legal assistant in these practice areas, including drafting of legal instruments. (F, Su)  

LEGL 219  Adv. Bus Law for Act Majors  
Prerequisite: LEGL 210 1.0 minimum  
Recommended: Accounting Background  
This self-paced course is intended for students majoring in accounting who have a goal of becoming a Certified Public Accountant (CPA). This course covers the law of sales; commercial paper; security devices; debtor-creditor relations; bankruptcy; insurance; agency; partnership; corporations; wills, trusts and estates; employment regulation; real property; and accountant's liability. The course is taught via Computer Managed Learning (C.M.L.). (F, Sp)  

LEGL 220  Internet Legal Issues/Organizing  
Prerequisite: LEGL 215 1.0 minimum  
This class will introduce global issues and organizations from the legal perspective and related economic and ethical perspectives. Cases based on events from around the globe will be used to illustrate principles, structures, and perspectives of citizens from many countries. Students will examine how these topics impact their daily activities. (Sp)  

LEGL 221  Real Estate Transaction  
Prerequisite: LEGL 115 2.0 minimum and LEGL 215 1.0 minimum  
Covers fundamental principles of real estate property law and introduces the student to common types of real estate transactions encountered by a legal assistant in a typical real estate practice. Subject matter includes deeds, land contracts, mortgages, title insurance, environmental issues, forfeitures and foreclosures, and landlord-tenant relationships. (F)  

LEGL 222  Probate Law and Procedure  
Prerequisite: LEGL 115 2.0 minimum and LEGL 215 1.0 minimum  
Probate process will be addressed in detail, from commencement of proceedings through closing the estate of a decedent. Other topics will include wills, trusts, and related topics. Emphasis is on the part played by the legal assistant in preparation of documents and other probate practice tasks. (Sp)  

LEGL 223  Domestic Relations  
Prerequisite: LEGL 115 2.0 minimum and LEGL 215 1.0 minimum  
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  
Prerequisite: LEGL 115 2.0 minimum and LEGL 215 1.0 minimum  
The relationship of governmental administrative agencies to private citizens is explored by studying how law is created and enforced by such agencies at the state and federal levels. Legal assistant students will focus on topics including rule making procedures, regulations, adjudication, licensing, and informal action. (F)  

LEGL 225  Legal Research and Writing II  
Prerequisite: LEGL 120 1.0 minimum and LEGL 121 1.0 minimum  
Reviews principles of legal research, analysis, and writing. Introduces student to computer-assisted legal research (LEXIS and Westlaw). Student will draft legal memoranda, opinion letters, and an appellate brief based on extensive research assignments in federal and Michigan publications. Some classes may be at off-campus libraries. (F, Sp)  

LEGL 226  Legal Interview/Investigation  
Prerequisite: LEGL 115 2.0 minimum and LEGL 215 1.0 minimum  
Interviewing and investigation methods including information gathering, analysis, and effective communication. Emphasis will be placed on the role of the legal assistant with numerous practical exercises. (Sp)  

LEGL 227  Bankruptcy and Collections  
Prerequisite: LEGL 115 2.0 minimum and LEGL 215 1.0 minimum  
Explores federal bankruptcy law and procedure with emphasis on the legal assistant's role in collecting information, interviewing clients, and preparing documents. Topics include a comparison of selected chapters within the bankruptcy code, exemptions, preferences, petitions, schedules, and the part played by the bankruptcy trustee. (Su)
LEGL 228 Legal Assistant Internship
Prerequisite: Department Approval
Student will experience the paralegal career by working as a legal assistant in a supervised capacity. Placements include private law firms, governmental law offices, courts, corporations, and other law-related settings. Requirements include at least 360 hours in the workplace, weekly reports, periodic meetings, and performance evaluations by on-site supervisor. (F, Sp, Su)

LING - LINGUISTICS

LING 230 Introduction to Linguistics
Prerequisite: None
Examines human language from the perspective of contemporary American linguistics: generative syntax, phonology, and morphoology. Special attention is given to the structure of English. Consider regional and social variation, and implications for teachers of language skills. (F, Sp)

MACH - MACHINE TOOL TECHNOLOGY

MACH 100 Manufacturing Processes
Prerequisite: None
Recommended: MATH 105 or Math Level 4
This course provides students with a comprehensive study of the materials, concepts, and processes used in modern manufacturing which is augmented by field trips to local manufacturing plants. This course is designed for those who are pursuing careers in manufacturing design, engineering, and supervision. (F, Sp, Su)

MACH 105 Machine Tool Survey
Prerequisite: None
Recommended: MATH 105 or Math Level 4
Introduces students to the machine tool principles and practices used in industry. Safety, terminology, measurement and procedures are used to complete required projects. A working knowledge of hand and machine tools is achieved through a series of lectures, demonstrations and hands-on projects. (F, Sp, Su)

MACH 110 Machine Tool Technology I
Prerequisite: MATH 105.2.0 minimum
Introduces students to the machine tool principles and practices used in industry. Safety, terminology, measurement and procedures are used to complete required projects. A working knowledge of hand and machine tools is achieved through a series of lectures, demonstrations and hands-on projects. (F, Sp, Su)

MACH 111 Machine Tool Technology II
Prerequisite: MATH 105.2.0 minimum
Recommended: MACH 110
This course is structured to apply hands-on applications to metal working saws, mills, drills and surface grinders. Bench work and layout procedures with technical terminology and mathematical applications are developed to the technical level of an apprentice. (F, Sp)

MACH 112 Machine Tool Technology III
Prerequisite: MACH 110.2.5 minimum and MACH 111.2.5 minimum
This course will use indexing, precision grinding, close tolerance milling, lathe work and broaching to complete the required projects. The student will accomplish these goals by using modern machine shop technology, applied math skills, planning and precision measuring instruments. (Sp)

MACH 120 Effect Use Machinery Handbook
Prerequisite: None
Recommended: MATH 114 or TECH 101
Machinery’s Handbook has been recognized as the “bible” for all phases of the metal working industry. This course will familiarize each student with the effective utilization of information contained in Machinery’s Handbook. (F, Sp, Su)

MACH 139 Die Construction
Prerequisite: None
Recommended: MACH 110 or MACH 111
This course will provide each student with a basic understanding of the essential principles of cutting and forming operations: die components such as punches, punch plates, die blocks and stripper; and an in-depth knowledge of how to repair and maintain the equipment common to the die industry. (Sp)

MACH 135 Metallurgy and Heat Treat
Prerequisite: None
This course is designed to give students 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
Prerequisite: None
Recommended: MACH 110 and MACH 111
This course examines tooling used in mechanical material removal. Tooling materials from high-speed steel to diamond will be discussed and demonstrated. Tooling geometry, reconditioning 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 194 Machine Tool Tech Project Lab
Prerequisite: Department Approval
Recommended: MACH 110.2.5 minimum or MACH 111.2.5 minimum
An advanced course for students wishing to do in-depth work in the machine shop area to develop trade-entry skills. Students select projects compatible with their individual needs of their field of work. Approval may be given to take this course twice for a maximum of eight credits. (F, Sp, Su)

MACH 210 Print Electric Discharge Mach
Prerequisite: None
Recommended: MACH 105 and MACH 111 and CNCN 110
This course introduces student to the fundamentals of Electrical Discharge Machining (EDM). Safety, principles of operation, programming and operation of both Ram and Wire EDM are explored. Lectures, demonstrations and projects are used. Projects assigned will require setup, programming and operation of EDM machines. (F, Sp)

MACH 212 Compound Angles
Prerequisite: MATH 114.2.0 minimum
Recommended: MATH 115
This course combines solid trigonometry, enabling students to solve problems involving angles in three-dimensional space in industrial applications. Emphasis on applications of actual tooling setups for complex machining operations is used to make the course relate to real life situations. (Sp)

MASG - MASSAGE THERAPY

MASG 270 Massage Therapy-Beginning
Prerequisite: None
Recommended: ANAT 145.2.5 minimum
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
Prerequisite: MASG 270.2.5 minimum
This course builds upon the information and techniques learned in MASG 270. Following a review of MASG 270, the student is introduced to specialized massage techniques. The student will learn contraindicated techniques and exploration of Swedish massage. (F, Sp, Su)

MASG 273 Human Structural Dynamics
Prerequisite: ANAT 145.2.5 minimum
This course provides the massage therapy student with an in-depth view of the areas of anatomy which are specific to massage, primarily within the musculoskeletal and nervous systems. (F, Sp)

MASG 274 Massage Laboratory
Prerequisite: MASG 271.2.5 minimum or Concurrently
This course is designed for students who intend to complete the Massage Therapy Certificate of Completion curriculum. It will provide the student with supervised practice of massage techniques in basic massage, polyclinic therapy, clinical, and sports massage. (F, Sp)

LANSING COMMUNITY COLLEGE 2000–2001
MATH 275 Touch for Health
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)

MATH 277 Polarity Therapy I
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)

MATH 278 Polarity Therapy II
Prerequisite: MATH 277 2.5 minimum
This course will deepen the student's understanding of polarity therapy. Advanced hands-on techniques and sequences will be taught to balance the various energy patterns of the physical body. Lectures will be on the philosophical, energetic, and spiritual principles that sustain and vitalize the physical form. (F, Sp)

MATH 279 Business Applications/Alg
Prerequisite: MATH 270 2.5 minimum
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 including planning, management, client-patient relationships, ethics, marketing, strategic planning, motivation, and professional ethics. (F, Sp)

MATH 280 Clin Approach Therap Massage
Prerequisite: MATH 271 2.5 minimum and MATH 273 2.5 minimum
The student will learn various therapeutic massage techniques and related therapies that will help relieve tension and pain in the musculature. Course includes contraindications, client-therapist relationships, health evaluations, drainage procedures, and anatomy/physiology review pertinent to therapeutic massage. (F, Sp)

MATH 281 Sports Massage Techniques
Prerequisite: MATH 280 2.5 minimum or Concurrently
The student will learn various massage techniques and related therapies that are specifically beneficial to the athlete. Applications for pre-, inter-, and post-athletic events and athletic training massage will be emphasized. (F, Sp)

MATH - MATHEMATICS

MATH 001 Math Minus Anxiety Workshop
Prerequisite: None
A workshop for adults who feel insecure about doing mathematics and need help and encouragement to succeed in math. The workshop uses technology and diverse real-world applications to improve problem-solving techniques and math study skills and reduce math anxiety. Students at any math level may enroll. (F, Sp)

MATH 050 Math-Principles and Practices
Prerequisite: MATH 030 2.0 minimum or MATH 033 2.0 minimum or MATH Level 3 and Reading Level 3 and Writing Level 2
This course reviews mathematical operations involving fractions and decimals. Topics include percent, ratios, proportions, U.S. and metric measurements, integers, statistical graphs, Pythagorean theorem, perimeter, area, and volume. It also introduces algebraic concepts using expressions and equations. Problem solving, estimation, and reasoning skills are taught. The calculator and real-life applications are integrated throughout the course. (F, Sp, Su)

MATH 103 Introductory Algebra, Part A
Prerequisite: (MATH 050 2.0 minimum or Math Level 4) and Reading Level 5 and Writing Level 2
Graphing calculator required. This course is the first half of MATH 107. Topics include properties of real numbers and exponents, variable expressions, solving linear equations, polynomial operations, ratio and proportion, graphing, solving systems of equations, and inequalities. Graphing calculator, diverse, real-life applications, and geometry are integrated throughout the course. (F, Sp, Su)

MATH 104 Introductory Algebra, Part B
Prerequisite: (MATH 103 2.0 minimum or MATH 103 Precollege Test) and Reading Level 5 and Writing Level 2
Graphing calculator required. 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, diverse, real-life applications, and geometry are integrated throughout the course. (F, Sp, Su)

MATH 107 Introductory Algebra
Prerequisite: (MATH 050 2.0 minimum or Math Level 4) and Reading Level 5 and Writing Level 2
Graphing calculator required. Topics include properties of real numbers and exponents, variable expressions, solving linear and quadratic equations, polynomial operations including factoring, graphing, solving systems of equations, rational expressions and equations, ratio and proportion, radicals, and inequalities. Graphing calculator, diverse, real-life applications, and geometry are integrated throughout the course. (F, Sp, Su)

MATH 112 Intermediate Algebra
Prerequisite: (MATH 104 2.0 minimum or MATH 107 2.0 minimum within 2 years or Math Level 5) and Reading Level 5 and Writing Level 4
Graphing calculator required. This is an extension of beginning algebra, using the graphing calculator, with emphasis on graphing and diverse, real-life applications, including linear, quadratic, rational, and other functions. Also emphasized are polynomials, rational expressions, radicals, real equations, functions, equations, systems of equations, with an introduction to complex numbers, interpreting data and matrices. (F, Sp, Su)

MATH 114 Technical Math I
Prerequisite: (MATH 050 2.0 minimum or Math Level 4) and Reading Level 2
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, and quadratic equations. Linear systems of equations, graphing, angles, triangles, Pythagorean Theorem, and right triangle trigonometry. Emphasis is placed on problem-solving techniques for technical applications. (F, Sp, Su)

MATH 115 Technical Math II
Prerequisite: MATH 114 2.0 minimum and Reading Level 5
A continuation of MATH 114. Topics include: congruent and similar triangles; polynomials; circles with angles, chords, and tangents; applications of right and oblique triangles using the Pythagorean Theorem, trig functions, law of sines, law of cosines, and law of cotangents. Emphasis is placed on problem-solving techniques for technical applications. (F, Sp, Su)

MATH 117 Math for Business
Prerequisite: (MATH 104 2.0 minimum or MATH 107 2.0 minimum or Math Level 5) and Reading Level 5 and Writing Level 4
This course surveys math applications in business. Applications representing management, marketing, finance, accounting, and statistics are used. Analysis of situations in business and correct use of business theory is emphasized in addition to accuracy in math. (F, Sp, Su)

MATH 121 College Algebra I
Prerequisite: (MATH 112 2.0 minimum or Math Level 5) and Reading Level 5 and Writing Level 4
This course provides the foundation in college algebra essential for all subsequent mathematics courses. (After completing MATH 121, students may take STAT 170, MATH 122, 124, 131, 141 and 201.) Topics include polynomial, rational, radical, exponential, and logarithmic functions; solving equations/inequalities algebraically and graphically; and rational/irrational modeling/representation in problem solving. (F, Sp, Su)

MATH 122 College Algebra II and Trig
Prerequisite: (MATH 121 2.0 minimum or Math Level 8) and Reading Level 5 and Writing Level 4
Second in two-course sequence, following MATH 121. Topics include right triangle trigonometry, trigonometric functions, graphs, identities, and equations, inverse trig functions, laws of sines/cosines, conic sections, systems of linear equations, vectors, polar coordinates, sequences, series, permutations, combinations. Degree credit may not be earned in both MATH 121-122 and MATH 126. (F, Sp, Su)
MATH 120 College Algebra and Trig
Prerequisite: (MATH 112 3.5 minimum or Math Level 7) and Reading Level 5 and Writing Level 4
This course covers the same material as MATH 121-122. Topics include algebraic and transcendental functions, solving equations/inequalities algebraically and graphically, mathematical modeling, trigonometric identities, laws of sines/cosines, binomial theorem, vectors, polar coordinates, sequences, series, permutations, and combinations. Degree credit may not be earned in both MATH 120 and MATH 121-122. (F, Sp)

MATH 128 Mathematics: A Practical Survey
Prerequisite: (MATH 210 2.0 minimum or Math Level 8) and Reading Level 5 and Writing Level 4
This course is a survey of mathematical topics for students majoring in fields outside the natural sciences. The student is introduced to practical topics and their historical significance. Topics include data gathering, analysis and interpretation, finance, growth and decay models, optimization models, and geometry as art. (F, Sp, Su)

MATH 130 Finite Mathematics
Prerequisite: (MATH 121 2.0 minimum or Math Level 6) and Reading Level 5 and Writing Level 4
This is an alternate course to MATH 122 for students whose programs do not require trigonometry. Topics studied include mathematics of finance, matrices, linear programming, permutations, combinations, probability, random variables, game theory, and Markov chains. In addition, students will solve applied problems by completing required computer assignments. (Sp)

MATH 141 Calculus with Applications
Prerequisite: (MATH 121 2.0 minimum or MATH 126 2.0 minimum or Math Level 8) and Reading Level 5 and Writing Level 4
This course 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, Sp, Su)

MATH 151 Calculus I
Prerequisite: (MATH 120 2.0 minimum or MATH 126 2.0 minimum or Math Level 9) and Reading Level 5 and Writing Level 4
The first course in a three semester calculus sequence. Topics include limits, continuity, derivatives of algebraic, trigonometric, exponential and logarithmic functions, linear approximation, integration and the fundamental theorem of calculus. Applications of the calculus to both physical and geometric problems are emphasized. (F, Sp, Su)

MATH 152 Calculus II
Prerequisite: MATH 151 2.0 minimum and Reading Level 5 and Writing Level 4
The second course in a three semester calculus sequence. Topics include techniques and applications of integration, L'Hopital's rule, derivatives of inverse trigonometric functions, improper integrals, sequences and infinite series, power series representations of functions, conic sections, and polar coordinates. (F, Sp, Su)

MATH 201 Math for Liberal Arts I
Prerequisite: (MATH 121 2.0 minimum or Math Level 8) and Reading Level 5 and Writing Level 6
Topics help students understand what mathematics is. They include analysis/interpretation of data, real numbers, bases other than 10, polynomials, golden figures, tiling, and applications of functions. A strong historical theme is present throughout. Students are involved in concept development as well as in finding answers. Intended primarily for prospective elementary teachers. (F)

MATH 202 Math for Liberal Arts II
Prerequisite: MATH 201 2.0 minimum and Reading Level 5 and Writing Level 6
Topics help students understand what mathematics is. They include number theory, logic, calculus, mathematical games, graph theory, trigonometry, and algorithmic reasoning. A strong historical theme is present throughout. Students are involved in concept development as well as in finding answers. Intended primarily for prospective elementary teachers. (Sp)

MATH 253 Calculus III
Prerequisite: MATH 152 2.0 minimum and Reading Level 5 and Writing Level 4
The last course in a three-semester calculus sequence. Multivariable calculus and vector analysis are studied. Topics include vector algebra, curves and surfaces in 3-space, vector valued functions, partial derivatives, multiple integrals, and line integrals. Applications of all these topics are presented. (F, Sp, Su)

MATH 254 Intro: Differential Equations
Prerequisite: MATH 253 2.0 minimum and Reading Level 5 and Writing Level 4
An introduction to the basic methods for solving ordinary differential equations. Topics include the methods of undetermined coefficients, variation of parameters, series, Laplace transforms, and numerical methods. Applications are emphasized. (F, Sp, Su)

MATH 260 Linear Algebra
Prerequisite: MATH 253 2.0 minimum and Reading Level 5 and Writing Level 4
This introduction to linear algebra includes the study of systems of linear equations, matrix algebra, vector spaces, linear transformations, eigenvalues and eigenvectors, with applications. (F, Sp, Su)

MATH 281 Honors Math Seminar
Prerequisite: MATH 151 2.0 minimum and Department Approval
Students solve a set of challenging mathematics problems which are not normally encountered in other classes. Creative and independent thinking is encouraged and developed. May be taken up to two semesters for credit. (Sp)

MATH 295 Independent Study in Mathematics
Prerequisite: Department Approval
An independent study in some area of mathematics not covered by an existing course. Student works independently under the supervision of a faculty member. Student devotes three or more hours per week to this study in addition to their work with the assigned instructor. (F, Sp, Su)

MEDA 100 MA Administrative/Communicator
Prerequisite: Admission to Medical Assistant Program
Co-requisite Courses: MEDA 101 and MEDA 141
Introduction to role of medical assistant administrative clerical functions: professionalism, written communication, telephone communication, scheduling, referrals, filing, medical records management, patient counseling, and answering patient questions. (F)

MEDA 101 Clinical Skills I
Prerequisite: Admission to Medical Assistant Program
Co-requisite Courses: MEDA 100 and MEDA 141
Designed to provide the knowledge and skills necessary for performing clinical duties relating to the following topics: human anatomy, physiology, and medical terminology. (F)

MEDA 122 Basic Medical Laboratory Proc
Prerequisite: MEDD 121 2.5 minimum and CHSE 122 2.5 minimum (previously CHSE 111) and CHSE 122 2.5 minimum and MEDA 100 2.5 minimum and MEDA 131 2.5 minimum
Co-requisite Course: MEDA 142
Designed to give the student the laboratory experience in performing medical laboratory procedures. (F)

MEDA 141 Basic Medical Laboratory Proc
Prerequisite: Admission to Medical Assistant Program
Co-requisite Courses: MEDA 100 and MEDA 131
This course introduces the student to the clinical laboratory. Laboratory organization and safety will be discussed. Quality assurance issues will be emphasized. Basic principles and procedures for laboratory testing will be presented including collection and preparation of specimens, venipuncture, capillary puncture, urinalysis, and hematology. (F)

MEDA 142 Adv Medical Laboratory Proc
Prerequisite: CHSE 111 2.5 minimum and CHSE 122 2.5 minimum (previously CHSE 111) and CHSE 122 2.5 minimum and MEDA 100 2.5 minimum and MEDA 131 2.5 minimum and MEDA 141 2.5 minimum
Co-requisite Course: MEDA 132
This course builds on the student's understanding and performance of complex laboratory tests performed in medical offices. Basic pathology will be discussed. Topics from the following areas will be covered: clinical chemistry, immunology, microbiology, and hematology. Collection and preparation of specimens, etc. (Sp)

LANSING COMMUNITY COLLEGE 2000-2001
MEDA 181 Administrative Practicum  
Prerequisite: AHCC 110 2.5 minimum and MEDA 132 2.5 minimum and MEDA 142 2.5 minimum and OADM 207 2.5 minimum  
Co-requisite Course: MEDA 182  
Administrative practicum is designed to provide application of administrative theory. This course is programmed with specific performance objectives and activities. (Su)

MEDA 182 Clinical Practicum  
Prerequisite: AHCC 110 2.5 minimum and MEDA 130 2.5 minimum and MEDA 142 2.5 minimum and OADM 207 2.5 minimum  
Co-requisite Course: MEDA 181  
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 - METEOROLOGY

METR 220 Introduction to Meteorology  
Prerequisite: Reading Level 5 and Writing Level 4 and Math Level 5  
This course includes a study of the interrelationships of the elements (temperature, moisture, pressure, wind) that create weather. Human-atmospheric interactions (e.g., pollution, severe weather, greenhouse effect), world climate, and climatic change are also discussed. Laboratory includes making weather observations and measurements and learning how to draw and interpret weather maps. (Sp)

MFGM - MANUFACTURING MAINTENANCE

MFGM 101 Industrial Hydraulics  
Prerequisite: None  
Industrial hydraulic introduces the theory of fluid power and circuits covering pumps, pressure valves, flow valves, cylinders, filters and motors, etc., as they are used in industry today. This will be done with lectures and labs related to each of the respective components. (F, Sp)

MFGM 102 Industrial Pneumatics  
Prerequisite: None  
Introduces students to the theory of industrial pneumatic systems. The theory of gas laws, pumps, filters, valves, etc., will be discussed as they are applied to the industrial pneumatics systems. The use of lecture and labs will give the students a hands-on approach to the use of pneumatics. (F, Sp)

MFGM 110 Machine Maintenance I  
Prerequisite: None  
Theory and industrial application of machine repair, preventive maintenance, safety practices and troubleshooting, with actual dismantling and rebuilding of tool room machines. (F, Sp)

MFGM 111 Machine Maintenance II  
Prerequisite: MFGM 110 2.0 minimum  
Advanced theory and practice of machine tool repair including preventive maintenance. The theory and repair of pumps and pneumatic tools will be covered. (F, Sp)

MFGM 120 Industrial Presses  
Prerequisite: None  
Covers different types of mechanical presses, terminology, purposes and functions in industry. Includes movies and slides of mechanical action, maintenance systems and safety, supplemented by visits to plants using presses and press repairs. For mechanical trades apprentices, press repair and maintenance people, stamping plant employees, press operators and die setup employees. (F, Sp)

MFGM 125 Rigging  
Prerequisite: None  
Covers uses and strengths of ropes, chains, block and tackles, and the construction and erection of gin poles, with a study of rope knots used in rigging. Safe working strength of slings, hooks, shovels, ropes and chains, and the use of personal safety equipment will be covered. (F, Sp)

MFGM 170 Fork Lift Truck Driver Train  
Prerequisite: None  
Students will learn the basic safety guidelines and basic operational procedures of industrial fork trucks. The instruction will combine lecture, written materials and hands-on operation of a fork truck. (F, Sp, Su)

MGT - MANAGEMENT

MGT 100 Managing Customer Relations  
Prerequisite: None  
This course is designed to help customer service workers and managers explore the dynamics of customer service and customer relations. The course includes strategies for providing for customer needs, behavioral skills and knowledge for effective customer service, verbal and non-verbal skills for effective customer communication, and techniques for measuring success. Focus is on the dynamics of building successful relationships. (F)

MGT 200 Creative Thinking for Business  
Prerequisite: None  
Recommended: Have Taken at Least Two or More BUSN, MGMT or Business Experience  
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)

MGT 223 Supervision  
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)

MGT 224 Human Resource Management  
Prerequisite: None  
This is a survey course which examines the role of human resources management and its contribution to the total management effort. Emphasis will be placed on the evolution of human resource management, recruitment and selection, appraising and improving performance, compensation and incentives, safety and health, employee-management relations, and current legislation. (F, Sp)

MGT 225 Principles of Management  
Prerequisite: None  
This course is designed to reflect the dynamics of our changing world and to provide students with an introduction to some of the issues, topics, and processes that managers face. Covers such topics as management functions and processes, quality, ethics, global issues, and the challenges and opportunities of diversity. In this course, students will manage themselves and their learning. (F, Sp, Su)

MGT 227 Training/Development for Business  
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)

MGT 228 Organizational Behavior  
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 and group behavior and will have opportunities to work on skills necessary for successful interaction in organizations. (F, Sp)

MGT 229 Compensation Management  
Prerequisite: MGMT 224 1.0 minimum  
Recommended: LABR 204  
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)

MGT 231 Team Development  
Prerequisite: None  
This course defines and examines team building, team leadership, and self-managed teams in the context of today's workplace. Students develop skills in writing team mission and vision statements, and team goals and action assignments. Students will develop skills in charting, problem solving, decision-making, conducting effective meetings and work sessions, negotiating, and presenting. (F, Sp)
MGMT 234 Diversity in the Workplace 3
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 235 Independent Study/Management 1-3
Prerequisite: Department Approval
Students design and implement special research projects to apply personal and professional experience to academic areas of interest; linking theory with practice. Students meet with coordinator and work independently towards completion of project report. (F, Sp, Su)

MGMT 237 Managing/Continual Improvement 3
Prerequisite: None
Provides an introduction to concepts of quality, continual improvement, systems thinking, and other new management practices. Covers the history of the quality movement including key thinkers/leaders. Explores new ways of thinking and leading methods for continual improvement teams, empowerment, and "learning organizations." (F, Sp)

MGMT 238 Time and Stress Management 3
Prerequisite: None
Explores relationship between time and stress management: stress is the causal factor for many of our physical and psychological problems. Suggests methods for harnessing its energy positively. Techniques and strategies for wise utilization of time and energy. Emphasis on creating action plan and initiating corrective actions. (F, Sp)

MGMT 240 How Manager Make Things Happen 2
Prerequisite: None
This practical skills-building program concentrates on the functions that most often determine management success. Students will learn how to improve their performance in key areas by analyzing their job, breaking it down into functional components, spotting weaknesses, and taking concrete action to turn them around. (F, Sp, Su)

MGMT 241 How Successful Women Manage 1
Prerequisite: None
This course is an overview of the various functions and processes involved in management. Students will explore possible explanations for women's slow rate of progress in attaining managerial positions. It is enlightening and an absolute must for any woman who is considering entering or is now a part of management. (F, Sp, Su)

MGMT 242 Mgrs Guide/Working with People 1
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 learn the unique characteristics of human relations and motivation, leadership styles, problem-solving techniques, and effective methods for handling situations. Students will also learn how to effectively deal with difficult behavior through positive work strategies. (F, Sp, Su)

MGMT 243 How to Delegate Effectively 1
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 demonstrate how this method of organizing and dispatching work can help improve everyday job performances. (F, Sp, Su)

MGMT 244 Supervisory Management 2
Prerequisite: None
This course is designed to help managers at all levels to develop, enhance and update their skills. Major areas of emphasis include planning, operating, controlling, personal functions, decision-making, job design, job analysis, and quality control within the department. (F, Sp, Su)

MGMT 245 Leadership Skills for Managers 1
Prerequisite: None
In this course, the student will discover the secrets of great leadership and learn about the four basic leadership styles. You will master the art of goal setting, find your most effective leadership style, and know when to use it at the right time. (F, Sp, Su)

MGMT 246 Fundamental Mod Personnel Mgmt 1
Prerequisite: None
An organization's success often rests on the management of its staff. This course provides managers with comprehensive ideas and techniques for human resources programs that increase productivity and profits. (F, Sp, Su)

MGMT 247 Be a Successful Project Mgr 1
Prerequisite: None
Gain a comprehensive understanding of the techniques and methodology needed to plan and control any project—large or small—in any industry. Students will examine both basic and sophisticated tools and learn how to use those tools as decision aids during project's tracking and controlling phases. (F, Sp, Su)

MGMT 248 Team Building 1
Prerequisite: None
More than ever, teams are a vital force in today's working environment. This course presents positive, practical methods for building and managing effective teams. Learn how to build trust, confidence, and group work skills and how to balance and fine-tune the team process. Participants will focus on the key aspects of team building, ranging from recruitment to empowering team numbers with authority and responsibility. (F, Sp, Su)

MGMT 249 Dealing with Difficult People 1
Prerequisite: None
Discover how seasoned managers cope with difficult personalities in the workplace. This course covers effective communication and motivational and conflict resolution approaches used by experienced managers. Students will also learn how to avoid difficult behaviors by instituting positive work strategies, structures, and values before problems develop. (F, Sp, Su)

MGMT 250 Fundmnt FinAccnt/Non-Fin Mgr 2
Prerequisite: None
Provides the manager with an understanding of finance. This course will help students learn to read and interpret financial statements, annual reports, and balance sheets. This course will help students use financial and accounting data more effectively. (F, Sp, Su)

MGMT 251 Communication Skills for Mgrs 1
Prerequisite: None
All managers have a basic tool they can use to effectively get messages across to staff and colleagues: communication. This course presents practical applications for communicating such as writing effective letters, memos and reports, running meetings, conducting interviews, and listening. (F, Sp, Su)

MGMT 252 Deliver a Winning Presentation 1
Prerequisite: None
This course will equip the student with basic awareness of the steps necessary for making an effective oral presentation. It is designed for anyone who wants to improve the fear of public speaking by learning how to deliver presentations. (F, Sp, Su)

MGMT 253 How to Write Winning Reports 1
Prerequisite: None
This course helps students develop a more concise, straightforward writing style. It will help the student express ideas more clearly in memos, letters, and reports. (F, Sp, Su)

MGMT 254 How to Write a Business Plan 2
Prerequisite: None
This course is designed for managers who want to give real meaning and power to their company's business plan. Participants will learn how to develop realistic action programs and responsibility plans for allocating scarce resources, installing workable monitoring and control systems, and creating supportive policies and procedures. (F, Sp, Su)

MGMT 255 Strategic Plan/Entrepreneur 1
Prerequisite: None
Owners and managers of new and growing businesses, or of companies that operate within an entrepreneurial environment, will learn how to prepare a strategic plan. Students will learn about organizational charts, goal-setting matrices, diagnostic summary sheets, and checklists—all designed to help them create a plan that works. (F, Sp, Su)
MGMT 257 Using Math as a Business Tool 1
Prerequisites: None
This course is designed to increase familiarity with formulas and calculations most frequently used in business. Participants will learn to apply various ratios to test a company's strengths, use statistical tools to read results more accurately, forecast more reliably, and assess the viability of a project through break-even analysis. (F, Sp, Su)

MGMT 258 Strategic Resumes 1
Prerequisites: None
The resume is a basic tool for finding new career opportunities. Students will refine their personal marketing tool, develop strategies, maintain resources, and create a packaged strategic, concise resume to help the applicant stand out and be noticed. (F, Sp, Su)

MGMT 260 How to Analyze the Competition 2
Prerequisites: None
This course will enable students to pinpoint competitors' strengths and weaknesses so students can identify and act upon competitive challenges before they occur. The course assists students in the design, implementation, and management of a competitor "intelligence" system. (F, Sp, Su)

MGMT 261 Psychology of Selling/Winning 1
Prerequisites: None
This course helps students realize their full potential for total success. It goes beyond positive thinking or other motivational programs to offer the key that unlocks inner power. It teaches participants what to do to become top professional salespeople and what they should do in order to sell successfully. (F, Sp, Su)

MGMT 262 Keep Satisfied Customers 1
Prerequisites: None
This course is designed to help simplify the task of keeping customers satisfied. The ultimate goal of this course is to help improve students' abilities to communicate effectively with customers. (F, Sp, Su)

MGMT 263 Successful Marketing/Serv Org 1
Prerequisites: None
Marketing concepts long associated with manufactured goods are now applied to the service sector. Learn how to create services for markets rather than markets for services. This course is designed for service company managers and others who need to sharpen their competitive edge. (F, Sp, Su)

MGMT 264 How to Write a Marketing Plan 2
Prerequisites: None
This course is designed for future or current small business owners, marketing managers, product managers, and others responsible for creating the marketing plan. Students will learn how to fuse vital elements to create a marketing plan that is right for their product line, service department, company, or organization. (F, Sp, Su)

MGMT 265 WWW Skills: Business/Personal Dev 1
Prerequisites: None
This course is designed for individuals who wish to benefit from online knowledge—the information superhighway. Included is a highly visual introduction to the World Wide Web, with Windows overview and basic WWW skills. Students will be introduced to web page creation. The course is designed for interactive WWW learning or reading. (F, Sp, Su)

MGMT 266 Enter International Markets 2
Prerequisites: None
International trade and marketing is growing rapidly in business. This course will help the student to capitalize on "going global" by providing information on how to research resources, learn terminology, and develop foreign market entry strategy. It is designed for the individual entrepreneur or a manager wishing to improve the bottom line. (F, Sp, Su)

MGMT 268 Organizing Your Workspace 1
Prerequisites: None
Organization is a skill that is easy to learn. Personal productivity is reduced by as much as 25 percent or more from ineffective organization of the workspace environment. This course is for anyone who experiences "clutter" in their daily activities. The student will get organized and stay organized as technology impacts the way we work. (F, Sp, Su)

MGMT 270 Time Management 1
Prerequisites: None
Time management techniques can be applied to both personal and professional situations. Learners will discover basic principles of time management, and will also become aware of positive and negative stress, relaxation and balance techniques, and ways to reduce stress through changes in lifestyle. (F, Sp, Su)

MGMT 271 Managing/Resolving Conflict 1
Prerequisites: None
Conflict can be managed and yield positive results. Students of this course will gain practical knowledge, learn proven techniques, and acquire psychological insights they can use to resolve conflicts successfully. This course uses case studies, critical incidents, and realistic examples of conflict resolution to teach crucial skills. (F, Sp, Su)

MGMT 272 Success Through Assertiveness 1
Prerequisites: None
This course will help to put participants in command of their career in order to respond to difficult situations according to individual desires, interests, and feelings. Participants will learn how to deal appropriately with others, and become more effective with their interactions. (F, Sp, Su)

MGMT 273 Assist Persnal Interact Skills 1
Prerequisites: None
This course is designed to increase awareness of personal styles and preferences for interacting with others. It is also designed to heighten awareness of styles and preferences of people with whom the student interacts daily. (F, Sp, Su)

MGMT 274 Personal Financial Planning 2
Prerequisites: None
This course will show students how to start building financial security. It emphasizes spending strategies and capital-building techniques rather than housekeeping methods. The course is designed for anyone. (F, Sp, Su)

MGMT 275 How to Build Memory Skills 1
Prerequisites: None
This course is designed to help the student apply the skills that increase ability to obtain and utilize information. The result of using improved listening and memory skills will help realize leadership potential. (F, Sp, Su)

MGMT 276 How to Improve Writing Skills 1
Prerequisites: None
This course helps students strengthen their skills in key communication areas by knowing how to properly use words and phrases associated with business. (F, Sp, Su)

MGMT 277 Speed Learning 1
Prerequisites: None
This course offers an entirely different way to read that reduces reading time while increasing comprehension. It teaches how to organize thinking systematically so the reader can learn quickly and efficiently in all reading situations. (F, Sp, Su)

MGMT 278 Creative Fund-Raising 2
Prerequisites: None
As traditional funding sources become scarce, creative fund-raising is critical for an organization's survival. This course will guide the student through the process of defining fund-raising in an organization, identifying grant resources, and developing donors through special events. The student will design a strategic fund-raising plan for the solicitation and creative utilization of resources. (F, Sp, Su)

MGMT 279 Learn APA Write Style for Bus 1
Prerequisites: None
This course offers a self-paced, hands-on opportunity to learn the rules and style of the Publication Manual of the American Psychological Association. Practice is emphasized, not memorization, allowing the student to use APA as a skill or tool for improving business report writing skills. (F, Sp, Su)

MGMT 280 Management Internship 3
Prerequisites: Department Approval
Recommended: Have completed a minimum of 30 credits
Internships provide students with actual field 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 Managerial Leadership
Prerequisite: None
Recommened: Have Taken Previous MGMT Courses, and/or are Enrolled in the Northwood 3+1 Program, or Have Management Work Experience. Provides an overview of the changing roles of leadership within an organization. A review of historical perspectives in managerial leadership lays a foundation for exploration of the emerging roles and functions of leadership in today's changing environments. Theories and skills are applied to a variety of organizational settings. (F)

MGMT 304 Organizational Development
Prerequisite: None
Recommended: Have Taken Previous MGMT Courses, and/or are Enrolled in the Northwood 3+1 Program, or Have Management Work Experience. Based on the assumption that all managers must recognize, plan for, and manage organizational change, this course examines the process of improving organization effectiveness by means of a systematic change program. Students practice identifying problems, selecting appropriate interventions, building action plans, and developing facilitator skills. (F, Sp)

MGMT 329 Adv Mgmt Communication Skills
Prerequisite: None
Recommended: Have Taken Previous MGMT Courses, and/or are Enrolled in the Northwood 3+1 Program, or Have Management Work Experience. This is an advanced course in interpersonal communication skills for business. It includes components of listening, interpersonal communication, oral presentations, interviewing techniques, meeting management, business report writing, and persuasive speaking. This class is both international and experiential. (F, Sp)

MGMT 332 Managerial Ethics
Prerequisite: None
Recommended: Have Taken Previous MGMT Courses, and/or are Enrolled in the Northwood 3+1 Program, or Have Management Work Experience. Designed to sensitize participants to the impact of ethics on decision-making, both personal and organizational. Participants will examine the basis for the behavior of managers, their own behavior, various means of controlling organizational behavior, and the bases for ethical standards. (F, Sp)

MGMT 335 Managerial Statistics
Prerequisite: None
Recommended: Have Taken Previous MGMT Courses, and/or are Enrolled in the Northwood 3+1 Program, or Have Management Work Experience. Application of statistical tools and techniques to improve decision-making processes and reduce managerial decision difficulty from less-than-perfect data. Includes sampling, description of sample data, methods of averaging, standard deviation, probability theory, estimation, and hypothesis testing. (F, Sp)

MGMT 337 Human Resource Mgmt Skills
Prerequisite: None
Recommended: Have Taken Previous MGMT Courses, and/or are Enrolled in the Northwood 3+1 Program, or Have Management Work Experience. Skill areas involved in the management of human resources are developed. Techniques for setting objectives with employees, conducting performance appraisals, and working with employee problems are practiced. Students plan techniques for managing teams and for leading and motivating employees. (F, Sp)

MGMT 350 Current Topics in Management
Prerequisite: None
Recommended: Have Taken Previous MGMT Courses, and/or are Enrolled in the Northwood 3+1 Program, or Have Management Work Experience. Study of specific topics and issues in today's society that affect managerial decisions. Students explore internal and external constraints on actions. External factors considered are political, social, ethical, and legal. Special emphasis is given to international events impacting domestic management practices. Internal factors considered are shareholders, employees, and customers. (F)

MGMT 359 Mgmt Styles/Corp Strategies
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
Prerequisite: None
Recommended: Have Taken Previous MGMT Courses, and/or are Enrolled in the Northwood 3+1 Program, or Have Management Work Experience. This course is designed to provide necessary and practical skills to deal with financial matters and communicate with people who specialize in finance. Topics covered include basic financial analysis, short-term and long-term financing, financial planning, and managing the finance function. (F, Sp)

MGMT 348 Strategic Management/Policy
Prerequisite: MGMT 325 1.0 minimum or MGMT 300 1.0 minimum and Any MGMT Course Between MGMT 304 - 348 (Inclusive) 1.0 minimum This course pulls together learning from the areas of management and marketing to gain an overall organizational perspective which is applied to strategic plan formulation and implementation for the whole organization. The process involves pursuing organizational mission while managing the relationships of the organization to its environment. (F)

MICR 203 Microbiology
Prerequisite: Reading Level 5 and Writing Level 6 and Math Level 4
Recommended: Biology and Chemistry
An introduction to bacteria, viruses, and other microorganisms as they relate to human health. Emphasis on bacterial and viral structure, life cycles, and genetics; antimicrobial therapy; immunology and host defenses; and the epidemiology, treatment, and prevention of selected infectious human diseases. (F, Sp, Su)

MICR 204 Microbiology Laboratory
Prerequisite: MICR 203 2.0 minimum or Concurrently and Reading Level 5
Basic laboratory principles of microbiology for allied health students. Emphasis on microscopy, aseptic cultivation of microorganisms, differential staining, assays of antimicrobial agents, and diagnostic laboratory techniques. Students will identify unknown bacterial species and examine medically important parasites. (F, Sp, Su)

MILS 101 Leadership: Military Profession
Prerequisite: None
This course analyzes the military profession and organization of the U.S. Army from several academic perspectives and explores the technical, ethical, and personal ramifications of service as an officer in the U.S. Army. This course provides an introduction to military leadership which draws upon examples from military history. (F, Sp)

MILS 102 Leadership: Wilderness Survival
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, resolute, modified resolute, and polar coordinates to determine location. Lab includes land navigation exercises using a compass pass in a field environment. (F, Sp)

MILS 201 Leadership: The Military Leader
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)

MILS 202 Intro to Land Navigation/Tactics
Prerequisite: None
This course provides instruction in emergency first aid techniques including casualty evaluation, lifesaving measures, CPR, and environmental injury prevention. It reviews the Army's Physical Fitness Program, and introduces individual and group fitness programs. Rappelling, individual and squad tactics, and field training exercises are provided. Lab includes leadership training. (F, Sp)
MKTG 100 Current Issues in Business 3
Prerequisite: None
This is an introductory course designed to enhance a student's occupational preparedness and competency 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 solid foundations of marketing knowledge and managerial "know-how." (F, Sp)

MKTG 119 Mktg/Manage Your Personal Image 3
Prerequisite: None
This course is a complete guide for everyone people and their companies need to know to do the right thing at the right time in every business situation. Students will understand the importance of a professional image as it relates to business success and will develop a personal image development plan. (F, Sp)

MKTG 120 Sales 3
Prerequisite: None
This course presents the fundamentals of sales and highlights its role in the marketing mix. Students will develop basic skills needed to enter the field. Topics include customer buying habits, the sales process, product demonstration techniques, and the analysis of human relations aspects of sales. (F, Sp, Su)

MKTG 122 Field Sales Internship 3
Prerequisite: Department Approval
Recommended: Have Completed a Minimum of 30 Credits
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 Compt Field Sales Internship 3
Prerequisite: Department Approval
Recommended: Have Completed a Minimum of 30 Credits
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 3
Prerequisite: None
Students will gain understanding of activities and strategies used in selling goods to ultimate consumers. The course develops awareness of problems facing retailers and explores feasible solutions. Career opportunities in retailing are examined. (F, Sp)

MKTG 131 Merchandising 2
Prerequisite: None
Functions and policies: what, when, where, how much, how to, and from whom to buy. Introduction to merchandising, merchandise management, store management, and operations, how to evaluate and set up effective controls, and new trends in merchandising. Career opportunities are also explored. (Sp)

MKTG 140 Introduction to Advertising 3
Prerequisite: None
Methods and techniques used in modern advertising. Information on the entire advertising function, preparation of an advertising campaign will be required to facilitate hands-on understanding of the components parts which include marketing review, marketing plan, creative strategy, and media selection. (F, Sp)

MKTG 200 Principles of Marketing 3
Prerequisite: None
Recommended: BUSN 118
Designed to refine marketing, develop an understanding of the marketing concept and functions, and generally investigate the field of marketing. Will cover the marketing environment, identifying consumer needs, examining product, price, promotion, and distribution strategies within our society. Provides a basic marketing understanding with practical applications. (F, Sp, Su)

MKTG 202 Managerial Marketing 3
Prerequisite: MKTG 200 1.0 minimum
Recommended: MKTG 204 and Second Year Student
The course focuses on the solution of marketing problems through case analysis. It relates marketing to the total enterprise by analyzing problems, and suggesting approaches to business decision-making. Particular attention is paid to the elements of the marketing mix and how marketing management deals with these variables. (Sp)

MKTG 204 Marketing Research 3
Prerequisites: MKTG 200 1.0 minimum
Types of data, sampling, data collection, analysis, interpretation, and applications of marketing research. A practical managerial approach—not a statistical or mathematical orientation. Students will design and execute a marketing research project. (F)

MKTG 210 Marketing on the Internet 2
Prerequisite: None
Recommended: MKTG 200 and Basic Understanding of Computers and Their Use on the Internet
This course will explore the impact of information technology on the practice of marketing. Course content focuses on the Internet, its culture, and procedures from a marketing perspective, and will include the use of the Internet for customer contact and customer service. This class uses extensive hands-on activities. (F, Sp)

MKTG 221 Consumer Behavior 2
Prerequisite: None
Covers the basic perspectives involved in consumer motivation and decision-making. Students will investigate relevant variables that shape consumer actions and concepts that integrate the study of consumer behavior with the practice of marketing. (F)

MKTG 231 Independent Study in Marketing 1-3
Prerequisite: Department Approval
Advanced marketing students design, implement, and draw conclusions relevant to a marketing project or a specific area of interest in marketing. Minimum of 15 hours of work per credit is required. (F, Sp, Su)

MKTG 235 Marketing Internship 3
Prerequisite: Department Approval
Recommended: Have Completed a Minimum of 30 Credits
Practical work experience in an approved business setting. Minimum of 160 hours work required. (F, Sp, Su)

MTEC - MEDIA/TECHNOLOGY

MTEC 110 Intro Broadcast/Elec Media 4
Prerequisite: Reading Level 5 and Writing Level 6
A survey of the history, technology, regulation, economics, programming, and societal effects of the electronic media. (F, Sp, Su)

MTEC 120 Audio Production I 4
Prerequisite: Reading Level 5 and Writing Level 6
Recommended: Basic Computer Skills
A beginning course which covers the basics of audio theory and production techniques. Included are topics on tape editing, audio mixing, and basic nonlinear digital editing. This class provides the foundational theory for the other classes in the audio series. (F, Sp, Su)

MTEC 121 Audio Recording I 4
Prerequisite: MTEC 120 2.0 minimum
Recommended: Basic Computer Skills and MTEC 220
A beginning course in audio recording which covers the basics of multi-track recording, both studio and remote. Emphasis is placed on microphone selection and placement, use of mixing consoles for the recording session, and multitrack recorders. (F, Sp)

MTEC 122 Sound Reinforcement 4
Prerequisite: MTEC 120 2.0 minimum
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
Prerequisite: Reading Level 5 and Writing Level 6
Survey of the radio broadcast industry including careers, qualifications, responsibilities, and station operation. Introduces basic studio production and on-air presentations. (F, Sp, Su)
MTEC 150 TV Production I
Prerequisite: Reading Level 5 and Writing Level 6
Recommended: Basic Computer Skills
This course places special emphasis on the components of effective visual communication. The development of pre-production processes related to visual composition, scriptwriting, storyboarding, lighting, and floor 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 152 Video Production Techniques
Prerequisite: MTEC 150 2.0 minimum and (MTEC 120 2.0 minimum or Concurrently) and Reading Level 5 and Writing Level 5
Video Production Techniques is designed as an introductory experience to the process of single camera video production. This course will also provide the student with an introductory experience in linear videotape editing. Class sessions will contain instructional and performance exercises which are practical applications of the course content. (F, Sp)

MTEC 153 Video Post-Production Techniques
Prerequisite: MTEC 150 2.0 minimum and (MTEC 162 2.0 minimum or Concurrently) and Reading Level 5 and Writing Level 5
Video Post-Production Techniques is designed to provide the student with an extensive experience in both linear and non-linear post-production technologies. Learning activities within and outside the classroom are designed to provide a solid technical and creative foundation in the procedures used in the creation of video programming. (F, Sp)

MTEC 220 Audio Production II
Prerequisite: MTEC 120 2.0 minimum
Recommended: Basic Computer Skills
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
Prerequisite: MTEC 121 2.5 minimum
Recommended: Basic Computer Skills
A second course in audio recording that covers advanced techniques used in multitrack studio recording. Emphasis is on use of the multitrack studio and signal processing equipment for multitrack mixing as well as the use of SMTE and MIDI. (Sp)

MTEC 223 Sound Reinforcement Practicum
Prerequisite: MTEC 122 2.5 minimum and Department Approval
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
Prerequisite: MTEC 150 2.0 minimum
Recommended: Basic Computer Skills
Presentation of advanced studio and remote-production techniques. Emphasis on writing, producing, and performing for commercials, news, and sports programs. (F, Sp)

MTEC 231 Radio Programming and Promo
Prerequisite: MTEC 150 2.0 minimum
Recommended: Basic Computer Skills
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 promoring station image and the effects of ratings are analyzed. (Sp)

MTEC 232 Radio Workshop
Prerequisite: MTEC 150 2.0 minimum and Department Approval
Recommended: Basic Public Speaking Skills or SPCH 100
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/Copywriting for Media
Prerequisite: MTEC 110 2.0 minimum and WRIT 121 2.0 minimum
Recommended: Basic Computer Skills
Basic writing techniques and formats used in preparing program scripts for television, radio, and multimedia productions. Emphasis on practical copyrighting techniques for commercial, promotion, public affairs, documentary, and entertainment programs. (Sp)

MTEC 241 Radio News Reporting
Prerequisite: MTEC 130 2.0 minimum and WRIT 121 2.0 minimum
Recommended: Basic Computer Skills
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
Prerequisite: MTEC 110 2.0 minimum
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 supervisor. (Sp)

MTEC 243 Ethics/Social Impact of Media
Prerequisite: MTEC 110 2.0 minimum and WRIT 121 2.0 minimum
Recommended: Basic Computer Skills
This course explores the effects of the mass media on American culture and society. Topics such as privacy, censorship, violence, and portrayals of minorities and women are discussed. These discussions take place within an ethical reasoning framework. (F, Sp, Su)

MTEC 250 TV Production II
Prerequisite: MTEC 150 2.0 minimum
Recommended: Basic Computer Skills and MTEC 151
An advanced production course focusing on the development of the technical and creative skills necessary to direct the work of a studio production team. Production assignments are modeled after activities found in broadcast production environments. Additional academic exercises include interpretation and translation of script ideas into effective video programming. (Sp)

MTEC 251 Advanced Field Production
Prerequisite: MTEC 151 2.0 minimum or (MTEC 152 2.0 minimum and MTEC 153 2.0 minimum) or IMAG 118 2.0 minimum and Reading Level 5 and Writing Level 6
Recommended: Basic Computer Skills
An advanced production course designed to provide the student with high-level instruction in videography and electronic editing techniques. Class sessions contain instructional and critical analysis exercises of contemporary video programming. All production exercises are conducted outside of classroom sessions. Course assignments are evaluated on technical and artistic guidelines. (F)

MTEC 252 Lighting for Television/Video
Prerequisite: (MTEC 150 2.0 minimum or THEA 111 2.0 minimum or IMAG 118 2.0 minimum) and Reading Level 5 and Writing Level 6
Recommended: MTEC 151
An advanced instructional seminar on lighting techniques for video and television production. Special emphasis is placed on developing creative and technical lighting approaches applicable to a broad range of program subjects. In-class examples and assignments are used for developing individual lighting techniques. (Sp)

MTEC 254 Electronic Presentations Graphics
Prerequisite: MTEC 150 2.0 minimum
Recommended: Basic Computer Skills
An introduction to the production of electronically-generated visuals for use with video presentations. Computer and video hardware will be used to create desktop graphics and special effects as elements of television programs. (Sp)

MTEC 255 Video Workshop
Prerequisite: MTEC 151 2.0 minimum and Department Approval
Recommended: Basic Computer Skills
This course provides guided laboratory and practical production experience in the creation of professional videoproduction projects. Projects include opportunities to work in a variety of production and post-production positions during the semester. Emphasis will be placed on developing course materials of a professional caliber that students can later use as portfolio or resume materials. (F, Sp, Su)
MTEC 290 - Guided Independent Study 1-4
Prerequisite: MTEC 110 2.0 minimum and MTEC 120 2.0 minimum and MTEC 130 2.0 minimum and MTEC 150 2.0 minimum and Department Approval
Restriction: Media Technology Majors
Recommended: 75% of the way through Media Technology Program
An opportunity for self-directed learners to explore topics of particular interest more thoroughly. Students will meet intermittently throughout the semester with an assigned faculty member for guidance and evaluation of progress. A proposal detailing the area of independent investigation must be submitted by the student prior to registration. (F, Sp, Su)

MTEC 295 - Media Practicum 3
Prerequisite: MTEC 110 2.0 minimum and MTEC 120 2.0 minimum and MTEC 130 2.0 minimum and MTEC 150 2.0 minimum and Department Approval
Restriction: Media Technology Majors
Recommended: 75% of the way through Media Technology Program
An opportunity to gain practical production experience in the media. Students are assigned to work on various audio, video, radio, and television projects within the Media Department. Faculty guidance and evaluation are an integral part of the experience. Practicum is intended only for advanced media technology students. (F, Sp, Su)

MTEC 296 - Media Internship 3
Prerequisite: MTEC 110 2.0 minimum and MTEC 120 2.0 minimum and MTEC 130 2.0 minimum and MTEC 150 2.0 minimum and Department Approval
Restriction: Media Technology Majors
Recommended: 75% of the way through Media Technology Program
An opportunity for students to work in external media settings under professional supervision. Students work closely with faculty in arranging and evaluating the workplace experience. Interview results determine intern placement. The internship is intended only for media technology majors who have completed at least 75 percent of their academic programs. (F, Sp, Su)

MTEC 298 - Special Projects 1-4
Prerequisite: MTEC 110 2.0 minimum and MTEC 120 2.0 minimum and MTEC 130 2.0 minimum and MTEC 150 2.0 minimum and Department Approval
Restriction: Media Technology Majors
Recommended: 75% of the way through Media Technology Program
An opportunity for students to work closely with faculty in the design and development of media-based projects and projects to be used by departments or divisions within the College. (F, Sp, Su)

MUSC 100 - Summer Chorus .5
Prerequisite: None
Recommended: Music Reading Skills
An ensemble of vocalists composed of students and community members, which develops general musicianship and provides training in choral singing. This group performs two 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 - Lionswingers Vocal Ensemble 1
Prerequisite: Vocal Audition - Lionswingers
Recommended: Music Reading Skills
The purpose of the Lionswingers, a vocal jazz ensemble, is to develop artistic and creative vocal jazz skills for ensemble performance. Advanced solo experience, improvisational 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 1
Prerequisite: None
Recommended: Music Reading Skills
An ensemble of women vocalists composed of students and community members, which develops general musicianship and provides training in choral singing. This 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)

MUSC 103 - Men's Ensemble 1
Prerequisite: None
Recommended: Music Reading Skills
An ensemble of male vocalists which develops general musicianship and provides training in choral singing. This group performs two to three concerts each semester. Men's Ensemble may be taken up to six semesters for credit. (F, Sp)

MUSC 105 - Private Lesson I 1
Prerequisite: None
Restriction: Music, Dance and Theatre Majors
This course is a private lesson, 30 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 II 2
Prerequisite: None
Restriction: Music, Dance and Theatre Majors
This course is a private lesson, 30 minutes per week, for performing arts students. Only music, dance, or theatre majors are eligible to enroll. This course may be taken up to six semesters for credit. (F, Sp, Su)

MUSC 108 - Concert Choir 1
Prerequisite: None
Recommended: Music Reading Skills
A group of singers who perform a wide range of music, sacred and secular. This group performs four to six concerts throughout the year. Students are required to attend live performances. May be taken up to six semesters for credit toward a degree. (F, Sp)

MUSC 119 - Lansing Concert Band 1
Prerequisite: Instrumental Audition - Lansing Concert Band
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 121 - Percussion Ensemble 1
Prerequisite: Instrumental Audition - Percussion
Recommended: Music Reading Skills
The percussion ensemble rehearses and performs pieces in a variety of styles and periods. Rhythmic reading skills and percussion technique will be honed and developed further. This ensemble performs two to four times per year. The course may be taken up to six semesters for credit. (F, Sp)

MUSC 123 - Jazz Ensemble 1
Prerequisite: Jazz Ensemble Audition
Recommended: Music Reading Skills
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 138 - Class Piano Major I 2
Prerequisite: Reading Level 5 and Writing Level 4
Restriction: Music Majors
The first in a series of two, this course is designed to develop the practical keyboard skills used in a music career. Students will gain keyboard facility, skill in sight-reading, and the ability to transpose. This series does not teach classical piano performance. MUSC 138 will cover all major scales. Students are required to attend live performances. (F)

MUSC 139 - Class Piano Major II 2
Prerequisite: MUSC 138 and Reading Level 5 and Writing Level 4
Restriction: Music Majors
Last in a series, this course will increase technical facility through playing more advanced compositions and minor scales in all forms. Students will gain skill in accompanying a melody using a variety of patterns. Students will learn to read open score and lead sheets using letter and numeral notation. (Sp)

MUSC 143 - Beginning Piano I - Summer .5
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 for this course. May be taken up to three semesters for credit. (Su)
MUSIC 144 Beginning Piano I
Prerequisite: Reading Level 3 and Writing Level 2
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)

MUSIC 145 Beginning Piano II
Prerequisite: MUSC 144 2.0 minimum and Reading Level 3 and Writing Level 2
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)

MUSIC 154 Class Voice Commercial I-Summer
Prerequisite: None
Beginning course designed to introduce students to vocal techniques and performance skills required in singing/forming commercial music. Breathing, posture, diction, tone production, interpretive skills, and microphone techniques are presented and developed. Students are required to attend live performances. May be taken up to three semesters for credit. (Su)

MUSIC 155 Class Voice Commercial I
Prerequisite: None
Beginning course designed to introduce students to vocal techniques and performance skills required in singing/forming commercial music. Breathing, posture, diction, tone production, interpretive skills, and microphone techniques are presented and developed. Students are required to attend live performances. May be taken up to three semesters for credit. (F, Sp)

MUSIC 156 Class Voice Commercial II
Prerequisite: MUSC 155 2.0 minimum
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)

MUSIC 157 Applied Lesson I
Prerequisite: Music Major Audition
Restriction: Music Majors
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)

MUSIC 158 Applied Lesson II
Prerequisite: MUSC 157 2.0 minimum or Music Major Audition
Restriction: Music Majors
This course is a private lesson, 60 minutes per week, for music majors. Enrollment is allowed upon successful completion of the MUSC 157 juried performance. This course may be taken up to three semesters for credit. (F, Sp, Su)

MUSIC 163 Aural Skills I
Prerequisite: None
This course allows students to develop their aural capacity through exercises in beginning melodic and rhythmic dictation. The ability to sing melodies on sight through the use of solfeggio will also be developed. This is the first of two courses in freshman aural skills. (F)

MUSIC 164 Aural Skills II
Prerequisite: MUSC 163 2.0 minimum
This course allows students to develop their aural skills through intermediate exercises in melodic and rhythmic dictation. The ability to sight-sing melodies through the use of solfeggio continue to be developed. This course is the second in a sequence of two freshman music major requirements. (F)

MUSIC 168 Intro to Musicianship I
Prerequisite: None
This course is for beginning musicians to gain an understanding of notating and reading pitch, rhythm, and music terminology and theory. Students are introduced to musical scales, key signatures, intervals, and chords. Students are required to attend live performances. (F, Sp)

MUSIC 169 Intro to Musicianship II
Prerequisite: MUSC 168 2.0 minimum or Music Theory Placement Test
This course is the second in a pair of courses for novice musicians to further their understanding of music notation and theory fundamentals. MUSC 169 builds on material covered in MUSC 168. Students will learn to construct melodies, create phrasing, and to harmonize a given or original melody. Students are required to attend live performances. (Sp)

MUSIC 179 Class Voice Major I
Prerequisite: WRIT 121 2.0 minimum or (Reading Level 5 and Writing Level 6)
Restriction: Music Majors
This course is designed to train singers in the International Phonetic Alphabet, assisting them in the pronunciation of English and foreign languages. This course focuses on English and Italian IPA skills, using the literature of the great composers of the United States, Great Britain, and Italy with historical and performance emphasis. Students are required to attend live performances. (F)

MUSIC 180 Class Voice Major II
Prerequisite: MUSC 179 2.0 minimum and (WRIT 121 2.0 minimum or Reading Level 5 and Writing Level 6)
Restriction: Music Majors
This course continues to train singers in the use of the International Phonetic Alphabet. Focus is on the German and French languages, with a historical and performance emphasis. These language skills will be utilized in performing the literature of the major composers of German lieder and French chansons. Students are required to attend live performances. (Sp)

MUSIC 181 Class Voice I - Summer
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)

MUSIC 182 Class Voice I
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)

MUSIC 183 Class Voice II
Prerequisite: MUSC 121 2.0 minimum
The advanced course in a series of two. This course will refine techniques such as breathing, posture, diction, tone production, and stage presence, introduced in MUSC 182. Students are required to attend live performances. May be taken up to three semesters for credit. (F, Sp)

MUSIC 187 Class Guitar - Summer
Prerequisite: None
This course is for beginners and experienced players who desire note-reading skills. Folk, blues, and classical guitar traditions are presented using basic electri-

MUSIC 188 Class Guitar
Prerequisite: None
This course is for beginners and experienced players who desire note-reading skills. Folk, blues, and classical guitar traditions are presented using basic electric technique. Beginning chord theory is introduced. Students will provide their own guitar, and attend live performances. (Su)

MUSIC 193 Basic Musicianship I
Prerequisite: MUSC 168 2.0 minimum and Reading Level 5
Co-requisite Course: MUSC 163
This course allows students to gain knowledge and skills necessary to hear and note pitches, rhythms, scales, modes, and intervals. This course is the first in a sequence of two courses in music theory. It serves as a freshman requirement for a four-year college music degree. (F)

MUSIC 194 Basic Musicianship II
Prerequisite: MUSC 193 2.0 minimum and Reading Level 5
Co-requisite Course: MUSC 164
This course presents intermediate music theory principles including dictation and transcription, harmony, four-part writing, counterpoint, basic music forms, and analysis. This course is second in a sequence of two. It serves as a freshman requirement for a four-year college music degree. (Sp)
MUSC 199 Music Appreciation 2
Prerequisite: Reading Level 5 and Writing Level 4
Designed for non-music majors, this course develops well-informed, focused listen-
ners. Students are acquainted with representative composers, compositions,
and musical characteristics of a variety of style periods from early music through
20th Century music. Students are required to attend live performances. (F, Sp, Su)

MUSC 200 Music Fund for Elementa Teachers 3
Prerequisite: None
Recommended: Music Reading Skills
This course addresses the cognitive and performance music skills necessary for
early childhood, elementary and special education majors. Successful teaching
methods for singing and focused listening will be presented along with classroom
performance on the piano and recorder. MUSC 200 may be taken as an elective.
(F, Sp)

MUSC 219 Introduction to Music Therapy 3
Prerequisite: Reading Level 5 and Writing Level 4
An overview of the history, philosophy, and methodologies and practices of Music
Therapy and the use of music in therapeutic aims of restoring, maintaining and
improving both mental and physical health. Exploration and assessment of various
clinical techniques and the disorders/patient populations they address. Off-campus
field experiences required. (F, Sp)

MUSC 230 Directed Independent Study 1–2
Prerequisite: Department Approval
Restriction: Music Majors
Advanced study in an area relating to, but not taught in, the curriculum. Student will
meet with an assigned faculty member once per week. Students must submit writ-
ten application detailing their projects for department approval. Students are required
to attend live performances. (F, Sp)

MUSC 232 Music Seminar 1
Prerequisite: Department Approval
Student will be given the opportunity to attend master classes on various related
topics or perform in a production on the main stage or comparable space. Limited
to individuals who have been selected as cast members or approved for master
class. (F, Sp, Su)

MUSC 233 Music Seminar 2
Prerequisite: Department Approval
Student will be given the opportunity to attend master classes on various related
topics or perform in a production on the main stage or comparable space. Limited
to individuals who have been selected as cast members or approved for master
class. (F, Sp, Su)

MUSC 240 World Music History I 4
Prerequisite: Reading Level 5 and Writing Level 6
Builds on historical information gleaned from MUSC 240, this course covers world
music history from 1600 to the present. Characteristic music, musicians, 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. (F)

MUSC 241 World Music History II 4
Prerequisite: Reading Level 5 and Writing Level 6
Building on historical information gleaned from MUSC 240, this course covers world
music history from 1600 to the present. Characteristic music, musicians, 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. (Sp)

MUSC 242 American Musical Theatre 2
Prerequisite: Reading Level 5 and Writing Level 4
Survey of the stylistic trends and developments in American Musical Theatre from
its origins to the present with attention to musical. Literary and dramatic forms.
Stylistic, cultural and social perspectives of the repertory are explored through
informed listening, multi-media lecture presentations, live performances and an
active learning environment. (F, Sp)

MUSC 248 History of Blues and Jazz 2
Prerequisite: Reading Level 5
An overview of the emergence, development and relevance of two of America's
most genuine musical artforms. Stylistic, cultural, and sociological investigations of
such music provide a mirror to the ever-changing popular American soundscapes.
Informed listening introduces major creator/performers, genres, expressions, and
refections of an increasingly global and technological musical world. (Sp)

MUSC 247 History of Rock and Roll 2
Prerequisite: Reading Level 5
Survey of the origins, elements, developments, and reflections of Rock and Roll
from its roots in the 1950's to the present. Major trends and artists are considered in
stylistic, social, commercial, and global perspectives. Informed listening and
comparative analyses reveal complex issues continuously defining Rock music
and its cultural legacy. (Sp)

MUSC 253 Business of Music 3
Prerequisite: None
An introduction to the business aspects of the music industry. Areas covered
include copyrights, contracts, trademarks, publishing, recording and record com-
pany operations, personal managers, booking agents, concert promotions, and
unions. Students are required to attend live performances. (F)

MUSC 254 Band Management 2
Prerequisite: None
This course is designed to assist the professional musician or manager in creat-
ing or improving a performing band. All major aspects of band management are
covered, including intra-band arrangements, contracts, negotiations, format and
material choice, equipment, finances, promotion and sales, road management,
and basic organizational information. Students are required to attend live perfor-
mances. (Sp)

MUSC 257 Applied Lesson III 2
Prerequisite: MUSC 158 2.0 minimum or Music Major Audition
Restriction: Music Majors
This course is a private lesson, 60 minutes per week, for music majors. Enrollment
is allowed upon successful completion of the MUSC 158 juried performance. This
course may be taken up to three semesters for credit. (F, Sp, Su)

MUSC 258 Applied Lesson IV 2
Prerequisite: MUSC 257 2.0 minimum or Music Major Audition
Restriction: Music Majors
This course is a private lesson, 60 minutes per week, for music majors. Enrollment
is allowed upon completion of the MUSC 257 juried performance. This course may
be taken up to three semesters for credit. (F, Sp, Su)

MUSC 263 Aural Skills III 1
Prerequisite: MUSC 164 2.0 minimum
This course is a continuation of the first year of aural skills training. The student
will proceed to more advanced training in sight-seeing and sight-singing. This course
is the first in a sequence of two sophomore level aural skills courses. (F)

MUSC 264 Aural Skills IV 1
Prerequisite: MUSC 263 2.0 minimum
Advanced training in aural skills will continue as this course is the second in a
sequence of two sophomore aural skills courses. Melodic and harmonic dictation
involving chromaticism and modulation will be studied, as well as more advanced
sight-singing exercises. (Sp)

MUSC 270 Rock Guitar I 1
Prerequisite: None
A presentation on fundamental rhythm and lead guitar techniques and music the-
ory concepts applicable to rock music from its rhythm and blues origin to the pres-
tent, as well as other related popular styles. Student must provide own guitar.
Students are required to attend live performances. (F, Sp, Su)

MUSC 276 Lyric Writing 2
Prerequisite: Reading Level 5 and Writing Level 4
This course introduces students to the craft of writing song lyrics. The work of pro-
fessional songwriters and as well as the students' work will be examined and dis-
cussed. Students are required to attend live performances. (F, Su)

MUSC 280 Private Songwriting 1
Prerequisite: Music Major Audition
Restriction: Music Majors
Private coaching for music majors. 40 minutes per week, in writing and copyright-
ing 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. (F, Su)
MUSC 293 Advanced Musicianship I
Prerequisite: MUSC 194 2.0 minimum and Reading Level 5
Co-requisite Course: MUSC 263
This course is a continuation of elements of music theory acquired in MUSC 193 and 194. Students will learn advanced elements of harmony such as modulation, Phrygian II chords, augmented sixth chords, and chromatic voice leading techniques. Basic principles of musical form will be introduced. Students are required to attend live performances. (F)

MUSC 294 Advanced Musicianship II
Prerequisite: MUSC 293 2.5 minimum and Reading Level 5
Co-requisite Course: MUSC 264
MUSC 294 consists of the study of major classical forms including: variation, sonata, rondo, and concerto forms. Counterpoint, 19th Century harmony, jazz, set theory, and twelve-tone theory will be studied. This is the second of two sophomore level music theory courses. Students are required to attend live performances. (Sp)

MUSC 297 Synthesizers & Computer Music
Prerequisite: None
Recommended: Music Reading Skills
This course introduces students to the role of computers in the music discipline. Topics include basic IBM and Macintosh personal computer skills, a thorough exploration of MIDI, music sequencing software, music printing software, and orchestration with electronic/digital instruments. (F, Sp)

NURS - NURSING

NURS 150 Fundamentals in Nursing Care
Prerequisite: Admission to Nursing Program and Reading Level 5 and Writing Level 6
The focus of this course is the nursing process as a problem-solving technique for meeting basic human needs. The concepts of perioperative care and cancer are presented, and the aging process is emphasized throughout. Clinics are in nursing homes, extended care facilities, and hospitals. (F, Sp)

NURS 160 Acute Nursing Care
Prerequisite: NURS 150 2.5 minimum and NURS 200 2.5 minimum and PHGY 200 2.5 minimum and (PSYC 205 2.5 minimum or Concurrently)
Co-requisite Course: NURS 165
Students are assisted in using the nursing process in the care of adults adapting to common acute health problems. Pathophysiology and nursing interventions affecting the cardiovascular, respiratory, endocrine, gastrointestinal, neurological, and musculoskeletal body systems are presented. Clinical in acute care hospital systems. (F, Sp)

NURS 165 Maternity Nursing Care
Prerequisite: NURS 150 2.5 minimum and NURS 200 2.5 minimum and PHGY 200 2.5 minimum and (PSYC 205 2.5 minimum or Concurrently)
Co-requisite Course: NURS 160
The concepts of maternity nursing, well-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. Clinics are in maternal-child units of hospitals and community agencies. (F, Sp)

NURS 200 Pharmacology
Prerequisite: PHGY 202 2.0 minimum or Concurrently
This course is recommended or students who wish to transfer to a BSN program. Drug categories are discussed in-depth as well as nursing responsibilities associated with medication administration. Students are expected to calculate drug dosages. (F, Sp, Su)

NURS 210 LPN-RN Transition
Prerequisite: Department Approval and Reading Level 5 and Writing Level 6
Recommended: Current Work Experience and Current BOLG and CSHA
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 Mental Health Nursing Care
Prerequisite: NURS 160 2.5 minimum and NURS 165 2.5 minimum and PSYC 205 2.5 minimum
Co-requisite Course: NURS 263
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. Clinics are in psychiatric and maternal units of acute care hospitals and day treatment facilities and community sites. (F, Sp)

NURS 265 Pediatric Nursing Care
Prerequisite: NURS 160 2.5 minimum and NURS 165 2.5 minimum and PSYC 205 2.5 minimum
Co-requisite Course: NURS 260
Concepts of illness in children are discussed utilizing a systems perspective. Students are expected to integrate the nursing process and course concepts into their care of children in hospital acute care maternity units, pediatric units, and other selected health care settings. (F, Sp)

NURS 280 Advanced Chronic Nursing Care
Prerequisite: MICR 203 2.5 minimum and NURS 260 2.5 minimum and NURS 265 2.5 minimum
Co-requisite Courses: NURS 285 and NURS 290
Recommended: MICR 204
The student will use the nursing process in caring for adult clients adapting to chronic health problems: client adaptation to chronic illness, selected neurological and immune system problems, cancer, AIDS, and care of the dying client is discussed. Clinical experiences in nursing homes, home health care agencies, and selected community facilities. (F, Sp)

NURS 285 Advanced Acute Nursing Care
Prerequisite: MICR 203 2.5 minimum and NURS 260 2.5 minimum and NURS 265 2.5 minimum
Co-requisite Courses: NURS 280 and NURS 290
The student will use the nursing process in caring for adults clients adapting to critical health problems. Hemostatic changes in the neurological, cardiovascular and respiratory systems is discussed, as well as fluid-electrolyte and acid-base imbalance. Clinical experiences are in acute care hospitals. (F, Sp)

NURS 290 Leadership in Nursing Care
Prerequisite: MICR 203 2.5 minimum and NURS 260 2.5 minimum and NURS 265 2.5 minimum
Co-requisite Courses: NURS 280 and NURS 285
The role of the nurse as manager of care and the role of the associate degree nurse within the discipline of nursing are presented. Students are expected to use the nursing process with various management systems within a health care system. Clinics in acute care hospitals and nursing homes. (F, Sp)

OADM - OFFICE ADMINISTRATION

OADM 102 Editing Business Documents
Prerequisite: None
Recommended: WRIT 114 or Proficiency in English Grammar and Mechanics
This course teaches office personnel applied editing skills for business documents and emphasizes locating and correcting errors in typing, word division, format, numbers, word usage, capitalize, and punctuation. Grammar rules will be reviewed as needed. Classroom activities may require completion of some exercises in one of the computer labs. (F, Sp, Su)

OADM 110 Machine Transcription
Prerequisite: None
Recommended: (CABS 105 or CABS 113) and WRIT 114
This course is designed for the production of legible communications by using transcribers, recorded cassettes, and an IBM PC with word processing software. Proficiency in typing, punctuation, grammar, and business vocabulary is emphasized. (F)

OADM 150 Cert Pro Secretar (CPS) Rev I
Prerequisite: None
Recommended: Experience as Professional Secretary
Discussion of the secretary's proficiency in office administration and communication. Effective travel, office management, records management and reportwriting, written business communications, editing, abstracting, and preparing communications in the final format. (F, Sp, Su)
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>OADM 155</td>
<td>Cert Pro Sec (CPS) Rw II</td>
<td>3</td>
<td>None</td>
</tr>
<tr>
<td>OADM 193</td>
<td>Health Information Management</td>
<td>3</td>
<td>None; Recommended: OADM 197 or Equivalent</td>
</tr>
<tr>
<td>OADM 200</td>
<td>Critical Thinking</td>
<td>3</td>
<td>None</td>
</tr>
<tr>
<td>OADM 203</td>
<td>Professional Office Procedures</td>
<td>2</td>
<td>None</td>
</tr>
<tr>
<td>OADM 206</td>
<td>Legal Vocabulary and Form Prep</td>
<td>3</td>
<td>None; Recommended: Word Processing Experience</td>
</tr>
<tr>
<td>OADM 207</td>
<td>Medical Transcription</td>
<td>3</td>
<td>None; Recommended: OADM 197 or CHSE 121 and ANAT 145 or ANAT 151</td>
</tr>
<tr>
<td>OADM 215</td>
<td>Records and Info Management I</td>
<td>3</td>
<td>None</td>
</tr>
<tr>
<td>OADM 216</td>
<td>Records and Info Management II</td>
<td>4</td>
<td>None; Recommended: OADM 215</td>
</tr>
<tr>
<td>OADM 220</td>
<td>Administrative Office Mgmt</td>
<td>4</td>
<td>Prerequisite: Reading Level 3 and Writing Level 4</td>
</tr>
<tr>
<td>OADM 222</td>
<td>Advanced Medical Transcription</td>
<td>4</td>
<td>Prerequisite: OADM 207.0 minimum</td>
</tr>
<tr>
<td>OADM 227</td>
<td>Cultural Differences in Busn</td>
<td>3</td>
<td>Prerequisite: Reading Level 5 and Writing Level 4</td>
</tr>
<tr>
<td>OADM 228</td>
<td>Paramedic Medical Trauma I</td>
<td>4</td>
<td>Prerequisite: Admission to Paramedic Program and Reading Level 5 and Writing Level 5 and Math Level 3</td>
</tr>
<tr>
<td>OADM 229</td>
<td>Paramedic Medical Trauma II</td>
<td>4</td>
<td>Prerequisite: OADM 228.0 minimum</td>
</tr>
<tr>
<td>OADM 231</td>
<td>Paramedic Cardiology</td>
<td>2</td>
<td>Admission to Paramedic Program</td>
</tr>
</tbody>
</table>

**Para + Paramedic**

<table>
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<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>PARA 221</td>
<td>Paramedic Medical Trauma I</td>
<td>4</td>
<td>Admission to Paramedic Program and Reading Level 5 and Writing Level 5 and Math Level 3</td>
</tr>
<tr>
<td>PARA 222</td>
<td>Paramedic Medical Trauma II</td>
<td>4</td>
<td>PARA 222.0 minimum</td>
</tr>
<tr>
<td>PARA 231</td>
<td>Paramedic Cardiology</td>
<td>2</td>
<td>Admission to Paramedic Program</td>
</tr>
</tbody>
</table>

**Notes:**
- Prerequisites, if any, are listed for each course.
- Prerequisites for admission to courses are listed separately.
- Course descriptions and details are provided for each course.
- Credit hours are indicated for each course.
- Some courses require specific prerequisites, such as Reading Level 3 and Writing Level 4.
- Courses may have prerequisites that include other courses within the curriculum.
PARA 232 Paramedic Cardiology II
Prerequisite: PARA 231 3.0 minimum
Co-requisite Courses: PARA 232 and PARA 242 and PARA 252 and PARA 253
Utilizes information learned in PARA 232 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)

PARA 241 Paramedic Pharmacology I
Prerequisite: Admission to Paramedic Program
Co-requisite Courses: PARA 221 and PARA 231 and PARA 251 and PARA 252
The first course in a two-course sequence. Designed to give the student background information necessary for the preparation and administration of drugs used in the field. ACLS drugs will be covered in-depth. (F)

PARA 242 Paramedic Pharmacology II
Prerequisite: PARA 241 3.3 minimum
Co-requisite Courses: PARA 222 and PARA 232 and PARA 252 and PARA 253
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)

PARA 251 Paramedic Skills I
Prerequisite: Admission to Paramedic Program
Co-requisite Courses: PARA 221 and PARA 231 and PARA 241 and PARA 251
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 labs, and tested for competency. Must have excellent basic EMT skills upon entry. (F)

PARA 252 Paramedic Skills II
Prerequisite: PARA 251 3.0 minimum
Co-requisite Courses: PARA 222 and PARA 232 and PARA 242 and PARA 252 and PARA 253
A continuation of Skills I with the introduction of new skills and additional application of theory. Measurement criteria for Skills I competencies becomes more stringent and students must become competent in all paramedic skills as well as applying theory to practice. (Sp)

PARA 261 Paramedic Clinical I
Prerequisite: Admission to Paramedic Program
Co-requisite Courses: PARA 221 and PARA 231 and PARA 241 and PARA 251
Provides clinical time for paramedic students in the first semester. Assignments include nursing homes, hospital units such as ED, CCU, ICU, Burn Unit, OB, and PCU; simulation on-campus; and designated EMS agencies under licensed paramedics. (F)

PARA 262 Paramedic Clinical II
Prerequisite: PARA 251 3.0 minimum
Co-requisite Courses: PARA 222 and PARA 232 and PARA 242 and PARA 252 and PARA 253
Provides clinical time for paramedic students in the second semester. Assignments include hospital units such as ED, CCU, ICU, Burn Unit, OB, and PCU; simulation on-campus; designated EMS agencies under licensed paramedics; and a community service project. (Sp)

PARA 283 Paramedic Internship
Prerequisite: PARA 221 3.0 minimum and PARA 231 3.0 minimum and PARA 241 3.0 minimum and PARA 251 3.0 minimum and PARA 253 3.0 minimum
Co-requisite Courses: PARA 222 and PARA 232 and PARA 242 and PARA 252 and PARA 253
This course provides field internship with paramedic agency and testing for certification in Advanced Cardiac Life Support. (Sp)

PF00 100 Swimming: Primary Skills
Prerequisite: None
This course focuses on the development of basic swimming strokes, rhythmic breathing, survival swimming, and beginning diving skills. (F, Sp, Su)

PF0A 101 Swimming: Stroke Development
Prerequisite: None
Recommended: PF0A 100
This course stresses development of skills in front crawl and backstroke. Students will be introduced to the elementary backstroke and breaststroke. (F, Sp, Su)

PF0A 104 Swimming/Training
Prerequisite: None
Recommended: PF0A 104
This course is designed for persons interested in skill development in all competitive swimming strokes as well as in a fitness program design. The student should be able to swim 500 yards in 10 minutes. (F, Sp, Su)

PF0A 105 Advanced Swimming/Training
Prerequisite: None
Recommended: PF0A 104
This course is designed for the competitive swimmer seeking a high level of swimming. Advanced swimming/training incorporates some dry land training and waterpolo. (F, Sp, Su)

PF0A 106 Water Walking/Toning
Prerequisite: None
This course utilizes a variety of walking moves in shallow water to enhance cardiovascular fitness. Toning exercises for arms, abdomen, and thighs are used extensively. (F, Sp, Su)

PF0A 107 Water Exercise I
Prerequisite: None
This course utilizes stationary water exercises and water games to improve cardiovascular fitness and flexibility. No swimming skills required. (F, Sp, Su)

PF0A 110 Hydro-Fit Exercise I
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)

PF0A 111 Hydro-Fit Exercise II
Prerequisite: None
Recommended: PF0A 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)

PF0A 112 Scuba
Prerequisite: None
This course is a basic course in scuba diving. The course includes both classroom and pool training instruction. Upon successful completion of class, the student is eligible for scuba certification following open water training. (F, Sp, Su)

PF0A 114 Parent/Infant Water Adjustment
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)

PF0A 115 Parent/Toddler Water Adjustment
Prerequisite: None
Recommended: PF0A 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)

PF0A 116 Parent/Child Swim
Prerequisite: None
Recommended: PF0A 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 approval. (F, Sp)
PFAG 118 Arthritis Aquatics
Prerequisite: None
This course will give the student exercises for range of motion in comfortable water temperatures and will improve and help maintain flexibility and well-being. Arthritis Foundation approved program. (F, Sp)

PFAG 119 Scuba Certification Class
Prerequisite: PFAG 112 2.0 minimum or PEAF 112 2.0 minimum
This course is designed to allow students who have completed a course in basic scuba skills to become certified divers. Upon successful completion of the course, the student will receive the certification of those who have completed the course. (F, Sp, Su)

PFAG - PHYSICAL FITNESS: COMBAT/VOLUME/WEIGHT TRAINING

PFAG 100 Fencing: Beginning
Prerequisite: None
This course is designed to introduce the student to basic skills and theories in the sport of fencing. Course emphasis is placed on basic skills such as advance, retreat, lunge, disengage, coupé, one-two double, riposte, counter parry and riposte, and advance-lunge. Group instruction is used. (F, Sp, Su)

PFAG 101 Fencing: Intermediate
Prerequisite: PFAG 100 2.0 minimum
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)

PFAG 103 Judo: Beginning
Prerequisite: None
This course is designed to familiarize students with basic Judo techniques of throwing, blocking, and grappling. (F, Sp, Su)

PFAG 104 Judo: Intermediate
Prerequisite: None
This course builds upon the 12 basic Danetan skills and introduces rules and complex fencing movements. Students will use acquired skills in fencing bouts. (F, Sp, Su)

PFAG 105 Karate: Beginning
Prerequisite: None
This course introduces the basic skills of karate: kicking the foot and knees, and punching with the fist and hands. (F, Sp, Su)

PFAG 106 Karate: Intermediate
Prerequisite: None
This course further develops karate skills in punching with the fists and hands, kicking with feet and knees, and essential body movement in combative activities with an emphasis on free sparring. (F, Sp, Su)

PFAG 107 Karate: Advanced
Prerequisite: None
Recommended: PFAG 105 or 106
This course places primary emphasis on the development of sparring techniques as they relate to punching and kicking. Students learn to move toward the competitive aspect of karate as a martial art. (F, Sp, Su)

PFAG 108 Weight Training: Beginning
Prerequisite: None
This course is designed to promote physical fitness through weight training. Instruction includes principles, methods, and techniques for progressive resistance training. Students will design and develop their own program with emphasis on weight reduction, muscle strengthening, and body building. (F, Sp, Su)

PFAG 109 Body Building: Introduction
Prerequisite: None
This course is designed to introduce weight training and proper lifting of weights, proper use of machinery, and concepts of lifting. (F, Sp, Su)

PFAG 110 Body Building: Beginning
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)

PFAG 111 Body Building: Intermediate
Prerequisite: None
Recommended: PFAG 108 or PFAG 110
This course expands the student's ability to use machines and free weights to increase variations in lifting techniques. Students will also monitor food intake to provide information to assist with proper diet and nutritional needs. (Sp, Su)

PFDA - PHYSICAL FITNESS: DANCE COURSES

PFDA 142 Ballroom Swing I
Prerequisite: None
This course is designed to teach Swing Ballroom including partnering technique, dance posture, basic patterns, music, and style of the Swing dance. Includes introduction to dances using different styles and speeds of music such as East Coast swing, West Coast swing, jitterbug, and jive. Enrollment with a partner is strongly recommended. (F, Sp, Su)

PFDA 147 Latin Ballroom I
Prerequisite: None
This course is designed to teach partnering technique, dance posture, basic patterns, and music for Latin partnership dancing. Dances will be selected from the following: cha-cha, rumba, mambo, merengue, samba, and tango. Enrollment with a partner is strongly recommended. (F, Sp, Su)

PFDA 151 Ballroom Bronze I Workshop
Prerequisite: None
Introduction to the study of ballroom including partnering technique, dance posture, basic patterns, and music for traditional ballroom dances including waltz, fox trot, cha-cha, tango, and swing. Enrollment with a partner is strongly suggested. (F, Sp, Su)

PFDA 152 Latin Ballroom II
Prerequisite: None
Recommended: PFDA 147
This course is designed to build on the techniques introduced in Latin Ballroom I. Latin Ballroom I, Ballroom Swing I, or Ballroom Topics. Emphasis will be placed on the following dances: cha-cha, rumba, mambo, samba, salsa, merengue, and tango. Enrollment with a partner is strongly recommended. (F, Sp, Su)

PFDA 158 Line Dancing
Prerequisite: None
Line dances provide 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, Su)

PFDA - PHYSICAL FITNESS: DANCE COURSES

PFDA 100 Total Fitness A
Prerequisite: None
This course is a comprehensive fitness course with a view toward the whole person. Students will be given a fitness assessment including aerobic capacity and strength. Students will design an exercise plan tailored to their individual needs, with the guidance and supervision of their instructor. (F, Sp, Su)

PFDA 101 Total Fitness B
Prerequisite: None
This course views the whole person's fitness needs. Students will be given a fitness assessment, including aerobic capacity, body composition, flexibility, and strength. Students will receive a computer-generated exercise plan tailored to individual needs. Nutritional aspects of health will be discussed. (F, Sp, Su)

PFDA 102 Total Fitness C
Prerequisite: None
This course is a comprehensive fitness course with a view of the whole person. Students will be given a fitness assessment, including aerobic capacity, body composition, circuit training, and strength. Students will receive a computer-generated exercise plan tailored to individual needs. Nutritional aspects of health will be discussed as well as stress reduction techniques. (F, Sp, Su)
PFFT 103 Total Fitness D
Prerequisite: None
This course involves students in planning a fitness regimen. Students will be given a fitness assessment, including aerobic capacity, body composition, flexibility, and strength. Students will receive a computer-generated exercise plan tailored to individual needs. Nutritional aspects of health and stress reduction techniques will be discussed as part of daily lifestyles. (F, Sp, Su)

PFFT 105 Aerobic Walking
Prerequisite: None
This course centers on improving one’s fitness level through outdoor walking at an individually determined speed. Students will also develop a personalized healthy lifestyle plan which integrates exercise, diet, and stress management. (F, Sp, Su)

PFFT 107 Jogging: Beginning
Prerequisite: None
This course introduces jogging as a fitness modality and covers how to care for feet, proper equipment choices, clothing, and safety. (F, Sp, Su)

PFFT 111 Aerobic Boxing
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
Prerequisite: None
This course is designed to increase body flexibility by learning proper stretching techniques and applying these techniques to increase range of motion and muscle flexibility. (F, Sp, Su)

PFFT 113 Tone and Stretch
Prerequisite: None
This course combines calisthenics and stretching. Students will use floor exercises to tone muscles and increase flexibility. Proper stretching techniques will be emphasized. Students will evaluate which muscle groups are being worked. (F, Sp, Su)

PFFT 114 Advanced Circuit Training
Prerequisite: None
Co-requisite Courses: CJUS 260 and CJUS 261 and CJUS 262 and CJUS 263 and CJUS 264 and CJUS 265 and CJUS 266 and CJUS 267 and CJUS 268
This course is designed to incorporate strength conditioning, muscle endurance, flexibility, and cardiovascular training for a total body workout. This can be accomplished in a relatively short time frame by utilizing the circuit training method. (F, Sp, Su)

PFFT 120 Aerobic Exercise
Prerequisite: None
This course helps students to improve cardiovascular function and oxygen efficiency to enhance muscle structure and function through toning exercises, aerobic dancing, and stretching. (F, Sp, Su)

PFFT 122 Step Aerobics
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. Training and stretching exercises will be used to complete muscle balancing and flexibility. Educational material will be distributed to increase student's knowledge of fitness and wellness to improve personal quality of life. (F, Sp)

PFFT 135 Dance Exercise
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 100 Health and Wellness Seminar
Prerequisite: None
This course introduces students to eight hours of topics related to health awareness, wellness, and stress prevention. (F, Sp, Su)

PFHW 105 Medical Alternatives/Heal & Win
Prerequisite: None
This course discusses the relationship of health and stress. The effects of stress will be analyzed in the context of overall health. (F, Sp)

PFHW 109 Emergency Services Fitness I
Prerequisite: None
Restriction: Emergency Medical Services, Paramedic or Fire Science student
This course provides emergency service students with techniques and practice to maintain and improve the high degree of physical fitness necessary to meet the demands of their profession. (F, Sp, Su)

PFHW 110 Emergency Services Fitness II
Prerequisite: None
Restriction: Emergency Medical Services, Paramedic or Fire Science student
This course provides emergency service students with techniques and practice to maintain and improve the high degree of physical fitness necessary to meet the demands of their profession. (F, Sp, Su)

PFHW 111 Emergency Services Fitness III
Prerequisite: None
Restriction: Emergency Medical Services, Paramedic or Fire Science student
A continuation of PFHW/PEAK 109. This course provides emergency service students with techniques and practice to maintain and improve the high degree of physical fitness necessary to meet the demands of their profession. (F, Sp, Su)

PFHW 112 Emergency Services Fitness IV
Prerequisite: None
Restriction: Emergency Medical Services, Paramedic or Fire Science student
A continuation of PFHW/PEAK 110. This course provides emergency service students with techniques and practice to maintain and improve the high degree of physical fitness necessary to meet the demands of their profession. (F, Sp, Su)

PFHW 123 Human Nutrition
Prerequisite: Reading Level 5
Recommended: Biology
An introductory course in human nutrition. Topics include the role of nutrients: digestion, absorption, and metabolism of nutrients; role of vitamins and minerals; and the introduction of current and controversial topics when relevant. Topics can include fat diets, obesity, nutrition of athletes, food labels, alcohol, sugar, and food additives. (F, Sp, Su)

PFHW 151 Self-Awareness: KEY to Wellness
Prerequisite: None
This course introduces students to self-awareness that can lead to greater vitality in all aspects of life. The student will learn ways in which he or she is influenced by family and cultural beliefs. Tools for changing behavior will be presented. (F, Sp)

PFHW 160 Fit for Life Exercise
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, stress reduction, and development of a personalized healthy lifestyle plan. Assessment skills and wellness concepts will be put into practice. (F, Sp, Su)

PFHW 161 Stress Management
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 exercises, as well as flexibility, mobility, and range of motion. (F, Sp)

PFHW 165 Career/Life Planning
Prerequisite: None
This course introduces students 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 261 - Adult Lifestyles Exercise
Prerequisite: Current Fitness Evaluation and Department Approval
An opportunity for students to maintain and/or improve their fitness level through supervised aerobic exercise sessions and health education. Emphasis is on regular, safe exercise and healthy lifestyles. (F, Sp, Su)

PFIS - PHYSICAL FITNESS: INDIVIDUAL SPORT/INTEREST

PFIS 100 Bowling: Beginning 1
Prerequisite: None
This course is a basic introduction to bowling. Primary emphasis is placed on spot bowling, release, and approach. Students become familiar with bowling etiquette and scoring. (F, Sp, Su)

PFIS 102 Bowling: Advanced 1
Prerequisite: None
Recommended: PFIS 100 or PFIS 101
This course is an advanced review of skills introduced at the beginning and intermediate levels. Students develop strategies in lane reading. (F, Sp, Su)

PFIS 103 Golf: Beginning 1
Prerequisite: None
This course introduces students to the fundamentals of golf which include equipment, grip, stance and posture, club swing, and the rules and etiquette of golf. (F, Sp, Su)

PFIS 105 Golf: Intermediate 1
Prerequisite: None
Recommended: PFIS 103
This course will review the basics of golf equipment, grip, stance and posture, and club swing. Students will be given drills to foster and improve proper swing mechanics for course play. (F, Sp, Su)

PFIS 108 Pool: Beginning 1
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, shot selection, follow, draw, and center are covered. (F, Sp)

PFIS 109 Pool: Intermediate 1
Prerequisite: None
Recommended: PFIS 108
This course reviews the fundamentals of stance, grip, bridge, aim, and stroke. Skill improvement and concentration techniques are stressed. (F, Sp)

PFIS 111 Table Tennis: Beginning 1
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 1
Prerequisite: None
Recommended: PFIS 111
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 1
Prerequisite: None
Recommended: PFIS 111
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 1
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 1
Prerequisite: None
Recommended: PFIS 115
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 119 Bicycling Camping/Touring 1
Prerequisite: None
This course is a two-day, self-contained bicycle trip in a scenic area of Michigan. Participants carry their own gear and items needed for the entire trip. Students will cycle 45-50 miles each day. (F, Sp, Su)

PFIS 120 Tai Chi I 1
Prerequisite: None
Recommended: PFIS 121
This course introduces the first 30 forms of the Yang-style Tai Chi. Students develop techniques to focus on relaxation and inner calmness. (F, Sp, Su)

PFIS 121 Tai Chi II 1
Prerequisite: None
Recommended: PFIS 120
This course covers more difficult forms in Tai Chi. Yang-style Tai Chi stresses the health and well-being of the whole person. Yang-style movements allow students to move in slow, smooth, steady, and continuous movement. (F, Sp, Su)

PFIS 122 Aikido 1
Prerequisite: None
This course is an introduction to the philosophy of Aikido. Basic movements of Aikido as a martial art are introduced. (F, Sp, Su)

PFIS 123 Aikido: Continuing 1
Prerequisite: None
Recommended: PFIS 122
This course presents the 8th KYU forms through the 3rd KYU techniques. This course examines the philosophical underpinnings of Aikido. (F, Sp, Su)

PFIS 124 Yoga: Beginning 1
Prerequisite: None
This course is an introduction to yogic breathing and gentle yogic 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 1
Prerequisite: None
Recommended: PFIS 124
This course promotes psycho-physical integration of body and mind through yogic breathing, stretching, and relaxation. Guided breathing and visualization are used to enhance depth and quality of relaxation and meditation. (F, Sp, Su)

PFIS 126 Yoga: Special 1
Prerequisite: None
This course teaches modified and adaptive yogic breathing and stretching exercises to enhance the body's mobility of the movement-handicapped person. Folded knees and 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 131 Seminar: Special Subjects .5-3
Prerequisite: None
Seminars are designed to meet specific community needs. (F, Sp, Su)

PFIS 134 Theory and Practice of Yoga 2
Prerequisite: None
Recommended: PFIS 124
This class explores the theoretical foundations of yoga and its historical framework. Lecture, discussion, and in-class practice will give participants an opportunity to deepen their understanding of yoga theory and how it pertains to their daily practice. Students will explore how yoga exercises and relaxation practices promote health and fitness through stress reduction. (F, Sp, Su)
PFIS 139 Therapeutic Touch and Yoga
Prerequisite: None
Recommended: PFIS 134
This course will combine the theories and practices of yoga and Therapeutic Touch (TT). Each class will provide practice in the Theory of Energy as it applies to the individual learner and as an agent of healing. Balanced with TT will be physical postures, breathing and relevant research and theory. (F, Sp)

PFIS 145 Parent/Child Tumbling I
Prerequisite: None
Recommended: PFIS 145
This course introduces basic tumbling skills to work toward greater motor skill development through tumbling, stretching, balancing skills, and controlled movement. This class is designed for ages 3-4 years. (F, Sp)

PFIS 146 Parent/Child Tumbling II
Prerequisite: None
Recommended: 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. This class is designed for children ages 5 years and up or for those who have completed Parent/Child Tumbling I. (F, Sp)

PFIS 147 Basketball Fitness Training
Prerequisite: None
This course is not a traditional basketball class. Participants will be in a workout class that will have an emphasis on conditioning using basketball drills and basketball. Class activities will include running, continuous movement, shooting, defensive plays, and dribbling. (F, Sp)

PFIS 201 Independent Study
Prerequisite: None
This course is a directed research project in the area of physical education, recreation, or athletics. (F, Sp, Su)

PFKN 170 Foundations of Kinesiology
Prerequisite: Reading Level 5 and Writing Level 6
This is an introductory professional course in Kinesiology, which examines the multiple aspects of physical education and Kinesiology as a discipline, major, and profession. Sub-disciplines and career options in the field, along with historical and current issues in physical education, will also be discussed. (F, Sp)

PFKN 260 Growth and Motor Behavior
Prerequisite: Reading Level 5 and Writing Level 6
This is a fundamental course which investigates the relationship between biological maturation and physical growth as it relates to motor performance and motor skills learning. This course will also cover fundaments of motor learning, stages of skill acquisition, physical fitness, and motor abilities of children and youth. (F, Sp)

PFOA 105 Angling: Beginning
Prerequisite: None
This course is an introduction to the sport of angling with demonstrations of basic casting 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
Prerequisite: None
This course is designed to improve the angler's skills and knowledge of fish habitat. Many sophisticated casting techniques will be discussed. Weekly fishing trips for Michigan's premier gamefish are scheduled. (F, Sp, Su)

PFOA 110 Sem: Wilderness Survival Tech
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/edible plants of the world, and survival at sea. Optional three-day field trip exercise. (F, Sp, Su)

PFOA 111 Seminar: Wild Food Plants
Prerequisite: None
This course introduces 77 kinds of edible wild plants and their toxic look-alikes from Michigan and adjoining states. The students learn to distinguish these plants on the basis of observed plant characteristics. The material is illustrated in slides and handouts. Several outdoor experiences are provided. Conservation stressed. (F, Sp, Su)

PFPR 103 Athletic Training I
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)

PFPR 104 Athletic Training II
Prerequisite: PFPR 103 2.0 minimum or PEAA 103 2.0 minimum
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)

PFPR 105 Psychology of Coaching
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)

PFPR 106 Aerobic Insr Training & Cert
Prerequisite: None
This course will train the student on how to instruct a safe and effective aerobic fitness class. High and low impact aerobics, step aerobics, and muscle repetition work using light weights and resistance bands will be emphasized. Safe exercise techniques, developing creative choreography, and teaching modifications for special populations will be covered. Certification exams will be given. (F, Sp)

PFPR 110 Coaching Basketball
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 rules, 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)

PFPR 111 Coaching Volleyball
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)

PFPR 112 Coaching Soccer
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)

PFPR 114 Basic Lifeguarding
Prerequisite: None
This course is designed to provide the necessary minimum skills of training to qualify as an entry-level lifeguard. (F, Sp)

PFPR 115 Lifeguard Training
Prerequisite: None
This course is designed to provide the necessary minimum skills training for a person to qualify as a non-surf lifeguard. (F, Sp)

PFPR 116 Water Safety Instruction
Prerequisite: None
This course is designed to assist in teaching basic aquatic skills for instructors. Teaching modalities and how different students learn are covered. (F, Sp)

PFTE 100 Basketball: Beginning
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)
PHYS 200 Applied Physics 4
Prerequisite: Math Level 4
This course includes the basic principles of force, work, rate, resistance, energy, and power as applied to the four energy systems: mechanical (linear and rotational), fluid (liquids and gases), electrical and thermal systems. These four systems are developed by utilizing unifying concepts through mathematical expressions. (F, Sp)

PHYS 201 Introductory Physics I 4
Prerequisite: MATH 122 2.0 minimum or Math Level 6 and Reading Level 5
First in a two-semester sequence of algebra-based physics courses designed to cover the fundamental principles of physics, with applications to other fields. Core topics include one- and two-dimensional, circular and rotational motion, kinematics, forces, energy and momentum. Optional topics include solids and fluids, heat, and alternative energy sources and technology. Demonstrations and hands-on activities complement the lecture topics. (F, Sp, Su)

PHYS 202 Introductory Physics II 4
Prerequisite: PHYS 201 2.0 minimum and Math Level 6
Continuation of PHYS 201. Core topics include electricity, magnetism, vibrations and waves, sound, light, and optics. Optional topics include nuclear physics, quantum physics, elementary particles, semiconductors, relativity, and cosmology. Demonstrations and hands-on activities and projects complement the lecture topics. (F, Sp, Su)

PHYS 215 Physics I: Mechanics 5
Prerequisite: MATH 152 2.0 minimum or Concurrently and Reading Level 5
First in a two-semester sequence of calculus-based physics courses for science and engineering students. Topics include force and motion, momentum, work and energy, the conservation laws of energy and momentum, rotational motion, static equilibrium, gravitation, and oscillations. Integrated special topics may include relativity, nuclear physics, and thermodynamics. (F, Sp, Su)

PHYS 215 Phys II: Electrom/Wave/Optics 5
Prerequisite: PHYS 215 2.0 minimum and MATH 152 2.0 minimum
Second in a two-semester sequence of calculus-based physics courses for science and engineering students. Topics include electric and magnetic forces and fields, electromagnetic energy, currents and circuits, electromagnetic oscillations and waves, mechanical waves and sound, light waves, and physical and geometrical optics. (F, Sp)
### PHYS 225 - Physics I Laboratory

**Prerequisite:** PHYS 201 2.0 minimum or Concurrently or PHYS 215 2.0 minimum or Concurrently and Reading Level 5

**Recommended:** Experience with MS Excel or Equivalent Spreadsheet Software Laboratory course which complements Physics I. Experiments include investigations in mechanics and heat. The lab is intended to increase students’ knowledge of natural and technological phenomena as they learn effective laboratory techniques for gathering and interpreting data, communicating their results, and designing and implementing individual and team projects. (F, Sp, Su)

### PHYS 226 - Physics II Laboratory

**Prerequisite:** PHYS 225 2.0 minimum or Concurrently or PHYS 216 2.0 minimum or Concurrently and PHYS 225 2.0 minimum

**Recommended:** Experience with MS Excel or Equivalent Spreadsheet Software Laboratory course which complements Physics II. Experiments include investigations in electromagnetism, sound, and optics. The lab is intended to increase students’ knowledge of natural and technological phenomena as they learn effective laboratory techniques for gathering and interpreting data, communicating their results, and designing and implementing individual and team projects. (F, Sp)

### POLS - Political Science

#### POLS 120 - American Political System

**Prerequisite:** Reading Level 5
An analysis of the American political system. Emphasis is given to the federal system, with special attention to American government at the national level. (F, Sp, Su)

#### POLS 121 - State and Local Government

**Prerequisite:** Reading Level 5
A study of state and local governmental activities, their structures, functions, and methods of organizing resources and making policy. Consideration is given to the relationships between governmental units and the problems they confront, including relations between federal, state, and local government. (F, Sp, Su)

#### POLS 205 - Government Internship

**Prerequisite:** None
This course offers the student a chance to observe the actual workings of the political process by participating in it. Participation will provide students an exposure to public policy making and an opportunity to reflect on that process through course assignments. The program covers all levels of government, from city and township through the federal level. (F, Sp, Su)

#### POLS 206 - Advanced Government Internship

**Prerequisite:** None
This course offers the student a chance to observe the actual workings of the political process by participating in it. Participation will provide students an exposure to public policy making and an opportunity to reflect on that process through course assignments. The program covers all levels of government, from city and township through the federal level. (F, Sp, Su)

#### POLS 240 - Introduction to Public Policy

**Prerequisite:** Reading Level 5
This course will provide an analysis of political and organizational processes which influence the formulation and implementation of public policy. Special attention will be given to the formulation, implementation, and evaluation of various selected public policies. Further, the course is intended to develop some skills for the evaluation and design of policies. (Sp)

#### POLS 250 - Amer Pol Parties/Interest Grps

**Prerequisite:** Reading Level 5
Emphasizes the origins, structure, and functions of political parties, examines the American political system in terms of citizens’ concerns about community and government, and serves as a guide to political action by the citizenry. Included is the role and function of interest groups in American politics. (F)

#### POLS 260 - Comparative Political Systems

**Prerequisite:** Reading Level 5
An introduction to the institutions, processes, and policies of political systems throughout the world. The course will compare political cultures and behavior in the United States, the industrial nations of Europe and Asia, and the developing nations, with special emphasis on the themes of democracy, participation, and political change. (F, Sp, Su)

### PSYC - Psychology

#### PSYC 175 - PsyCh of Death: Prep for Living

**Prerequisite:** Reading Level 5 and Writing Level 4
Examines psychological theories, concepts, and research that pertain to the study of death and personal death awareness. Topics include cross-cultural and historical perspectives, health care systems, medical ethics, grief-loss issues, funerals and body disposition, legal and social issues, death in modern society, suicide, and beliefs about life after death. (Sp)

#### PSYC 200 - Introduction to Psychology

**Prerequisite:** Reading Level 5 and Writing Level 4
The basic orientation to the field of psychology, designed as a general survey and as preparation for advanced courses in the field. Topics include methods, nervous systems, intelligence, development, learning, personality, abnormality, therapy, and social behavior. (F, Sp, Su)

#### PSYC 202 - Psychology of Personality

**Prerequisite:** PSYC 200 1.0 minimum and Reading Level 5 and Writing Level 4
A survey of the leading theories of personality and personality development. Topics include Freudian/psychodynamic, trait, behavioral, humanistic, and Yoga/Buddhist theories, assessment of personality, and major personality theorists. (F, Sp, Su)

#### PSYC 203 - Social Psychology

**Prerequisite:** (PSYC 200 1.0 minimum or SOCI 120 1.0 minimum) and Reading Level 5 and Writing Level 4
A theoretical and empirical approach to understanding individual social and group behavior. Examines the person and the social environment with a focus on attitudes, interpersonal behavior, and group processes. (F, Sp)

#### PSYC 204 - Educational Psychology

**Prerequisite:** PSYC 200 1.0 minimum and Reading Level 5 and Writing Level 4
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 of odd years)

#### PSYC 205 - Human Growth and Development

**Prerequisite:** PSYC 200 1.0 minimum and Reading Level 5 and Writing Level 4
A study of the human life cycle from conception to death. Designed to investigate, describe, and explain changes in the physical, social, emotional, and cognitive areas that are a result of the continuous interaction of maturation and experience. (F, Sp, Su)

#### PSYC 208 - Cognitive Psychology

**Prerequisite:** PSYC 200 1.0 minimum and Reading Level 5 and Writing Level 4
Cognitive psychology is the study of the human mind: its domains include questions concerning how people perceive the world, remember information, understand language, learn, reason, and solve problems. (F)

#### PSYC 210 - Brain and Behavior

**Prerequisite:** PSYC 200 1.0 minimum or BIOL 121 1.0 minimum or BIOL 127 1.0 minimum and Reading Level 5 and Writing Level 4
Brain and Behavior integrates psychology and biology, emphasizing how the nervous system controls behavior. The course provides an examination of the structure and function of the nervous system and the neurochemical bases of mental illness, drug abuse, movement, sleep, memory, feeding and drinking, sensory processing, and neurological disorders. (Sp)
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 221</td>
<td>Child Psychology</td>
<td>3</td>
<td>Prerequisite: PSYC 200 1.0 minimum and Reading Level 5 and Writing Level 4. 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)</td>
</tr>
<tr>
<td>PSYC 222</td>
<td>Adolescent Psychology</td>
<td>3</td>
<td>Prerequisite: PSYC 200 1.0 minimum and Reading Level 5 and Writing Level 4. Examines theoretical and empirical literature related to adolescence, emphasizing biological, psychological, and sociological aspects of maturation and development from puberty to young adulthood. (Sp)</td>
</tr>
<tr>
<td>PSYC 240</td>
<td>Psychology of Human Sexuality</td>
<td>3</td>
<td>Prerequisite: Reading Level 5 and Writing Level 4. An exploration of psychological aspects of human sexuality, including research methods, responses, identity, development, attraction and intimacy, communication, orientation, attitudes, diseases, and disorders. (F)</td>
</tr>
<tr>
<td>PSYC 250</td>
<td>Abnormal Psychology</td>
<td>3</td>
<td>Prerequisite: PSYC 200 1.0 minimum and Reading Level 5 and Writing Level 4. A survey of the nature, development, diagnosis, and treatment of psychopathology viewed from a general-systems perspective (psychological, sociological, and biological). Major theories of causes, scientific research, and diagnostic and therapeutic techniques are studied with respect to various psychological disorders. (F, Sp, Su)</td>
</tr>
<tr>
<td>PSYC 295</td>
<td>Independent Study in Psychology</td>
<td>1-4</td>
<td>Prerequisite: Department 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)</td>
</tr>
<tr>
<td>PVA 285</td>
<td>Applied Appraisal Concepts I</td>
<td>1</td>
<td>Prerequisite: None. Recommended: Level 1 Certification. Field inspection and appraisal of residential, commercial and industrial properties. Emphasis is on potential appraisal problems utilizing the cost approach to value. (Su)</td>
</tr>
<tr>
<td>PVA 287</td>
<td>Applied Appraisal Concepts II</td>
<td>1</td>
<td>Prerequisite: None. Recommended: Level 1 Certification. Field inspection and appraisal of commercial and industrial properties which emphasize potential appraisal problems using the cost approach to value. (Su)</td>
</tr>
<tr>
<td>PVA 288</td>
<td>Income Approach to Value I</td>
<td>2</td>
<td>Prerequisite: None. Recommended: Level 1 Certification. This course introduces the advanced student to the appraisal concepts used in the appraisal of income-producing properties. (F)</td>
</tr>
<tr>
<td>PVA 289</td>
<td>Income Approach to Value II</td>
<td>2</td>
<td>Prerequisite: None. Recommended: Level 1 State Certification. Advanced study of the appraisal concepts utilized in the appraisal of income-producing properties. (Sp)</td>
</tr>
<tr>
<td>QUAL 100</td>
<td>Intro Quality Assurance</td>
<td>4</td>
<td>Prerequisite: None. This course examines the evolution and leaders of total quality management and introduces the concept of continuous improvement of processes, products, and services. Practical techniques and methods for evaluating and improving quality and the organizational requirements for managing quality are included. (F, Sp)</td>
</tr>
<tr>
<td>QUAL 103</td>
<td>Probability/Stats Qual Assur</td>
<td>4</td>
<td>Prerequisite: None. This course introduces the student to basic probability and statistics as related to quality assurance. Material covered includes probability concepts, average and standard deviation, discrete probability distributions, the normal distribution, the Central Limit Theorem, OC curves and basic acceptance sampling concepts. Computer applications are included. (F, Sp)</td>
</tr>
<tr>
<td>QUAL 104</td>
<td>Process Control Charting</td>
<td>3</td>
<td>Prerequisite: QUAL 103 1.5 minimum. This course examines the theory, selection, and implementation of variable and attribute control charts, including charts for small runs, target control charts, and multiple characteristic control charts. Application of control charts includes both manufacturing and service examples. (Sp)</td>
</tr>
<tr>
<td>QUAL 107</td>
<td>Problem-Solving Techniques</td>
<td>3</td>
<td>Prerequisite: None. This course introduces the student to various problem-solving tools and methods that can be used effectively for process or product improvement. A variety of both manufacturing and service applications will be examined. (F)</td>
</tr>
<tr>
<td>QUAL 115</td>
<td>Metrology</td>
<td>4</td>
<td>Prerequisite: QUAL 103 1.5 minimum. Introduces the student to the theory, use, and application of conventional and digital precision instrumentation. Designed to fulfill the needs of quality assurance and skilled trades students requiring a foundation in metrology. (F)</td>
</tr>
<tr>
<td>QUAL 121</td>
<td>Intro Statistical Process Cont</td>
<td>3</td>
<td>Prerequisite: None. This course provides an introduction to statistical process control (SPC) philosophy and techniques. SPC is a means of controlling and improving processes through the use of data. Students will be introduced to the history of SPC, the SPC philosophy, process variation, techniques including control charts and process improvement. (F, Sp)</td>
</tr>
<tr>
<td>QUAL 124</td>
<td>Quality Service/Customer Satis</td>
<td>3</td>
<td>Prerequisite: None. Students strengthen abilities to discover, design and deliver services to customers at levels representing high perceived quality and value and successful competitive positioning for business. Includes foundation concepts of quality, customer service, business operations and planning, customer and market segmentation, customer expectations, service delivery, service quality and business effectiveness evaluation. (F)</td>
</tr>
<tr>
<td>QUAL 135</td>
<td>Measure/gage Geom Tolerances</td>
<td>3</td>
<td>Prerequisite: QUAL 115 1.0 minimum. Recommended: Knowledge and Prior Usage of Measuring Equipment. This course is designed to develop skills in people who inspect and produce using geometric tolerances. Students are expected to already understand how to use and care for standard measuring equipment. Inspection methods for geometric symbols will include sample drawings, selection of appropriate equipment and step-by-step instructions for measuring the part. (Sp, Su)</td>
</tr>
<tr>
<td>QUAL 200</td>
<td>Quality Improvement Teams</td>
<td>4</td>
<td>Prerequisite: None. Covers problem-solving models and techniques for quality/productivity improvement and the human factor related to quality. Emphasis includes interpersonal and communication skills related to quality assurance. Students use problem-solving methods and techniques, learn team member roles, effective communication skills and prepare and present projects to the class. (F)</td>
</tr>
<tr>
<td>QUAL 203</td>
<td>Quality Systems Management</td>
<td>4</td>
<td>Prerequisite: None. Recommended: QUAL 100 or Work Experience in Quality. This course focuses on developing, managing and implementing quality assurance systems. Course material and assignments are designed to develop student skills in teamwork, supplier and customer quality relationships including quality planning, quality manual procedure and job instruction development, communication, training and preparation for quality certification programs and continuous improvement. (Sp)</td>
</tr>
</tbody>
</table>
QUAL 205 Cost of Quality
Prerequisite: None
Recommended: Previous Course in cost quality
This course introduces the student to definition and philosophy related to the calculation of quality costs through typical accounting methods to common quality practices. Basic financial concepts, benefits and problems related to cost data collection and analysis, trend analysis, planning and reducing cost are included. (3p)

QUAL 209 Reliability
Prerequisite: QUAL 103 1.5 minimum
This course introduces the student to definitions and characteristics of reliability. Topics covered include probability density function, reliability function, hazard function, life characteristic curve and reliability modeling for components and systems. (F)

QUAL 212 Applied Stats/Qual Assur
Prerequisite: QUAL 103 1.5 minimum
This course covers the topics of hypothesis testing, confidence intervals and sample size determination as applied to various distributions; such as the normal, student-t, chi-squared and F Correlation and regression. (F)

QUAL 215 Experimental Design in QA
Prerequisite: QUAL 212 1.5 minimum
This course covers the concepts of analysis of variance and experimental design. Topics include one and two way ANOVA, various graphical and numerical tests for effects, determination and testing of residuals and the use of mathematical models. (Sp)

QUAL 224 Supervisory Skills for Quality
Prerequisite: None
Recommended: Work Experience or Previous Quality Courses
This course will help students to develop skills for supervising personnel in a production environment consistent with current quality engineering principles. Topics include customer focus, employee selection, development, task analysis, evaluation and resource utilization and continuous improvement of quality and productivity. Utilizing data and employee involvement. (F)

QUAL 229 Qual Plan/Project Management
Prerequisite: None
Recommended: Work Experience or Previous Quality Courses
This course develops skills for planning quality processes, products and service, and managing projects. Development of quality control plans, FMEA, QFD, Gantt charts and other tools for project management, and the planning and managing of projects are included. (Sp)

QUAL 242 Quality Auditing
Prerequisite: None
This course is designed to develop auditing skills starting with required quality standards to plan quality audits, evaluate quality system documentation and practices and write audit reports. (F, Sp)

QUAL 251 Current Qual Assur Topics
Prerequisite: QUAL 100 1.0 minimum
A study of specific topics affecting quality assurance practices. This course is designed to expose students to the latest theories and practices in the areas of customer requirements, problem solving, quality management, measurement and statistics. Course format will include lectures, discussion, demonstration and hands-on experiences. (F, Sp, Su)

QUAL 252 Current QA Topics II
Prerequisite: QUAL 100 1.0 minimum
A study of specific topics affecting quality assurance practices. This course is designed to expose students to the latest theories and practices in the areas of customer requirements, problem solving, quality management, measurement and statistics. Course format will include lectures, discussion, demonstration and hands-on experiences. (F, Sp, Su)

READ 101 Reading Clinic IA
Prerequisite: Reading Level 1 and Writing Level 1
A four credit course designed to teach fundamental reading skills. Provides small group and one-to-one instruction to improve reading skills and confidence. For students whose reading skills range from pre-literate to basic literacy. (May repeat for credit three times.) (F, Sp, Su)

READ 104 Reading Skills IA
Prerequisite: Reading Level 1 and Writing Level 1
A four credit course designed to teach fundamental reading skills. Provides small group and one-to-one instruction to improve reading skills and confidence. For students whose reading skills range from pre-literate to basic literacy. (May repeat for credit three times.) (F, Sp, Su)

READ 105 Reading Skills IA
Prerequisite: Reading Level 1 and Writing Level 1
A four credit course designed to teach fundamental reading skills. Provides small group and one-to-one instruction to improve reading skills and confidence. For students whose reading skills range from pre-literate to basic literacy. (May repeat for credit three times.) (F, Sp, Su)

READ 108 Individualized Reading A
Prerequisite: Reading Level 3 and Writing Level 2
A four credit course 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 areas that need strengthening. (May repeat for credit three times.) (F, Sp, Su)

READ 109 Individualized Reading B
Prerequisite: Reading Level 3 and Writing Level 2
A three credit course 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 areas that need strengthening. (May repeat for credit three times.) (F, Sp, Su)

READ 111 Reading: Essential Strategies
Prerequisite: Reading Level 3 and Writing Level 1
Designed to provide a transition from mastery of basic reading skills and individualized tutorial literacy instruction to a mainstream, classroom learning experience. Includes emphasis in reading for main ideas, vocabulary development, improving comprehension, drawing conclusions from implied meaning and application of techniques to insure academic survival. (F, Sp, Su)

READ 114 Reading Skills
Prerequisite: Reading Level 3 and Writing Level 2
Designed to increase understanding of basic reading skills, build vocabulary, and prepare students for college-level reading through the exploration of effective study techniques. (F, Sp, Su)

READ 116 Reading Comprehension
Prerequisite: Reading Level 3 and Writing Level 4
Designed to extend beyond reading comprehension at the literal level, develop inferential ability and recognition of structure and expository patterns in reading and increase reading rate for greater reading efficiency. Additionally, attention is given to vocabulary improvement, multiple purposes of reading, importance of flexibility in reading, and increased concentration. (F, Sp, Su)

READ 165 Critical Reading
Prerequisite: Reading Level 5 and Writing Level 4
This course is designed to go beyond reading comprehension at the literal level and to develop in the individual the ability to grasp implied meanings and draw conclusions. The reader must also be able to perceive the structural and developmental pattern in written material and to judge rationally what he or she reads. (F, Sp, Su)

READ 175 Speed Reading - Adv Vocabulary
Prerequisite: Reading Level 6 and Writing Level 4
Designed for the student of an average or better-than-average reading ability, increases reading rate and comprehension for greater efficiency in studying and in general reading. Special attention is given to vocabulary improvement, the multiple purposes of reading, the importance of flexibility in reading, and increased concentration. (F, Sp, Su)
REAL 271 Introduction to Real Estate 2
Prerequisite: None
Overview of the real estate business. Emphasis on points of law and real estate principles useful to the beginning salesperson and/or potential buyer, seller, or investor. (F, Sp)

REAL 273 Real Estate Investment 3
Prerequisite: None
Recommended: REAL 271 or REAL 274
Emphasis on investment analysis, financing, depreciation, capital gains, exchanging, and federal tax implications of real estate acquisitions, ownership, and disposal. (Sp)

REAL 274 Real Estate License Exam 3
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
Prerequisite: None
Significance and nature of mortgage lending, mortgage money markets, sources, types of mortgages, instruments, qualifying the loan contract and its use, administration of a mortgage loan, and a loan portfolio and methods of foreclosure. (F, Sp)

REAL 277 Property Management 3
Prerequisite: None
Covers management of the market, marketing residential and commercial rental space, creating an organized management plan, tenant and landlord laws, rent collection, leases, tenant screening, fair housing requirements, tenant-owner relations, accounting for investment properties, real estate as an investment, managing apartments, office space, retail stores, and special-purpose buildings. (F, Sp)

REAL 279 Residential Appraisal 3
Prerequisite: None
This is a survey course on the appraisal of the single family residence. It is designed to expose the student to the basic economic, political, social, and environmental foundations upon which real estate valuation rests. The student will then encounter the processes by which freestanding, single family dwellings are valued. Students will also be acquainted with professional standards and ethics. (F)

REAL 280 Real Estate Law 3
Prerequisite: None
Recommended: REAL 271 or REAL 274
Topics covered include land and its elements, land titles, land interests, abstracts and title insurance, deeds, easements, liens, mortgages, land contracts, foreclosures and landlord-tenant relations, private land-use controls including restrictions, covenants, and tax policies pertaining to real estate. (Sp)

RELG 241 Old Testament Literature 4
Prerequisite: WRIT 121 2.0 minimum or WRIT 131 2.0 minimum or (Reading Level 5 and Writing Level 6)
This course surveys the content of Judaism's Bible (Christianity's Old Testament) in its original Hebrew cultural 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)

RELG 242 New Testament Literature 4
Prerequisite: WRIT 121 2.0 minimum or WRIT 131 2.0 minimum or (Reading Level 5 and Writing Level 6)
This course surveys the content of Christianity's New Testament in its original Hebrew 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)

RELG 250 Religions of East Asia 4
Prerequisite: Reading Level 5 and Writing Level 6
This course surveys the origins and development of East Asian religions. The religious beliefs and practices of Confucianism, Taoism, Buddhism (Mahayana and Tibetan), and Shinto are examined in terms of their vital role in the development of ancient and modern East Asian civilizations. (Sp)

SCI 257 - SCIENCE TECHNOLOGY INTERNSHIP 4
SCI 287 Internship in Science Technology 4
Prerequisite: CHEM 151 2.0 minimum and CHEM 161 2.0 minimum and Department Approval
This course provides on-the-job training for an applied degree in science technology. Placement is made at an approved training site to earn credits for satisfactory work performance. This internship may be paid or unpaid work experience. Students will apply knowledge and skills learned in academic courses to real world situations. (F, Sp, Su)

SCI 297 Independent Study in Science 1-4
Prerequisite: Department Approval
Special study in science topics such as biology, astronomy, physics, geology, zoology, or other natural sciences. The topic is chosen by the student, and the project is supervised by a member of the Science Department. (F, Sp, Su)

SDEV 103 Preventing Parent Burnout 1
Prerequisite: None
This course is designed to facilitate an understanding of parent burnout and its impact on mental and physical functions. The class will address causes, stages and symptoms, family and relationship dynamics, and problem solving. The course will provide multiple skills and mechanisms to cope with stress and prevent parent burnout. (F, Sp, Su)

SDEV 118 Stretching Your Dollars 2
Prerequisite: None
Assistance is given in very basic money management, budget procedures, record keeping, wise shopping practices, low-cost entertainment and recreation, effective debt payment methods, and financial goal-setting and planning. Consumer awareness and problems in the marketplace will also be addressed. (F, Sp, Su)

SDEV 121 Exploring Your Potential 2
Prerequisite: None
This course is designed to help each person identify past and present achievements which suggest the presence of strengths and potential. The goal of this class is greater realization of one's potential through self-determination. (F, Sp)

SDEV 123 Career Bridge 2
Prerequisite: None
Career Bridge enhances a smooth transition to college course work by helping the student identify a career direction, learn techniques of study, and build confidence in the pursuit of his or her educational goal. Positive behavioral choices will also be taught, including time management, the elimination of self-defeating behaviors, and increased self-esteem. (F, Sp, Su)

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SDEV 124 Techniques of Study 2
Prerequisite: None
Students examine their study habits and work toward practicing skills to enhance classroom performance. Classes include weekly lectures, discussions, and assignments. Skills covered include goal-setting, time management, note-taking, reading and memory strategies, library use, and taking exams. A valuable aid for beginning and advanced students. (F, Sp, Su)

SDEV 125 Career Planning 2
Prerequisite: None
Students learn a career planning process by identifying their interests, values, and skills through a variety of self-assessment exercises. Students will utilize available resources to research career options and participate in classroom discussions on topics related to career decision-making. (F, Sp, Su)

SDEV 126 Self-Defeating Behavior 2
Prerequisite: None
The goal of this course is to learn how self-defeating behaviors begin and are maintained, and how they can be eliminated. Behavior change is aimed at teaching people how to live life more fully and happily by identifying and cultivating dis-

giving behaviors. (F, Sp, Su)

SDEV 128 Self-Assessment 1
Prerequisite: None
This accelerated course is designed for students who have already identified career options. The emphasis in this course is research of these options through self-assessment, participation in classroom discussion and the development of a plan of action. (F, Sp, Su)

SDEV 130 Job Search Skills 1
Prerequisite: None
Skills and techniques in the job search process are taught. Course content covers filling out application, writing resumes and cover letters, interviews, and other techniques used in seeking employment. Group discussions focus on personal attitude toward job hunting. (F, Sp, Su)

SDEV 142 Assertiveness I 2
Prerequisite: None
This course teaches assertiveness. Assertiveness is behavior where a person expresses her or his opinions, feelings, beliefs, wants, personal rights, and values in a way that respects the rights of others. Techniques covered teach participants to identify and practice exercising interpersonal rights and assertive skills. (F, Sp, Su)

SDEV 145 Organizing Time 2
Prerequisite: None
The most effective and efficient use of time is learned through structured discussions, assignments, 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 1
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 151 Divorce: Problem and Solutions 1
Prerequisite: None
This course provides an introduction to strengths-based solutions in resolving problems with divorce and separation. Topics include: Circuit, Probate and Family Court; general knowledge of the family law system; resources available to families, and best strategies for positive family outcomes when parents live apart. This is a law course. (F, Sp, Su)

SDEV 153 Men's Discussion Group 1
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 2
Prerequisite: None
This course shows the basic concepts related to transactional analysis and how these concepts can enrich our lives. Within each of us is a child, an adult, and a parent relating to the world around us. Increased personal awareness about ourselves can help us to be more effective. (F, Sp, Su)

SDEV 157 Single Parenting 2
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 Women as Winners 1
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 2
Prerequisite: None
Using the teachings of Rational Emotive Training, a variety of activities 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)

SDEV 173 Breaking the Codependency Trap 2
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 1
Prerequisite: None
Designed to stress improvement of academic performance, the course provides mutual support and deals directly with the problems of underachievement. Students will learn to set and achieve short-term goals, identify motives and attitudes, and study behaviors that lead to success and those that are related to failure. (F, Sp)

SDEV 192 Counselling for College Success 2
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 2
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 the changes they can make in building a healthier relational lifestyle. (F, Sp, Su)

SDEV 202 Learn a New Way to Think 2
Prerequisite: None
Sessions are designed to break traditional mind patterns to assist the change process. Students study a variety of training strategies and learn new creative thinking techniques. These include: imagination; motivation; humor; forced relationships; visualization; and fantasy. This course is general in approach and not specific to any one academic discipline. (F, Sp)

SDEV 204 Self-Defense and Women 1
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 will focus on responses to unarmed attacks. (F, Sp, Su)

SDEV 205 Self-Defense and Woman II 1
Prerequisite: SDEV 204 or Concurrently
This seminar is both a review and expansion of the techniques and skills taught in Women and Self-Defense I (SDEV 204). Self-defense techniques taught in this class will focus on: "ground defense," responses to armed attacks, multiple attackers, and special situational attacks. (F, Sp, Su)
SDEV 225 Parenting in the Millennium
Prerequisite: None
This course will help parents move from "unconscious" to "conscious" parenting, changing from a parental domination to a relationship-centered model. The influence of childhood on parenting style, impact of communication in child-rearing, and understanding the power of the child/parent relationship are included. (F, Sp)

SDEV 237 Black Women's Awareness
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 those needs be met? (F, Sp)

SDEV 240 Empathy Training
Prerequisite: None
The student will learn how to use empathy as a technique to deal with emotions, values, and decision making in the communication process. The skills will be taught in a small group emphasizing a supportive, experiential atmosphere. (F, Sp, Su)

SDEV 245 Dealing with Stress
Prerequisite: None
This course is designed to promote awareness of how stress affects mental, emotional and physical health, and behavior. The goal is to help participants achieve lifetime coping skills. Topics include personal stressors, mental and physical coping strategies, dietary influences, communication, job or role stress, and coping with loss. (F, Sp, Su)

SDEV 271 Living Alone Creatively
Prerequisite: None
Designed for both single men and single women, this course will focus on creative and positive aspects of living alone (or with others). Information will be shared to increase self-awareness, develop skills, and create a support system to further the goal of living alone creatively. (F, Su)

SIGN - SIGN LANGUAGE

SIGN 156 Fingerspelling
Prerequisite: None
Recommended: SIGN 162 2.0 minimum or Concurrently
Provides the student with concentrated instruction and practice in both expressive and receptive fingerspelling skills. (F, Sp, Su)

SIGN 167 Beginning Sign to Voice
Prerequisite: None
Recommended: SIGN 162 2.0 minimum
Designed to increase the students' receptive skills in conversational sign language focusing on comprehension of the various manual communication systems utilized by deaf persons. Sign-to-voice techniques and practice will be introduced through use of prepared videotapes. (F, Su)

SIGN 168 Expressive Manual Commun
Prerequisite: SIGN 162 2.0 minimum
This course focuses on synthesizing grammatical elements of American Sign Language and using them in an expressive mode. It creates awareness of conversational behaviors used by the deaf community and provides practice of those behaviors in classroom and other settings. (Su)

SIGN 170 Creative Arts Signing
Prerequisite: SIGN 162 2.0 minimum
This class explores uses, considerations, and techniques for signing elements of the creative arts including poetry, storytelling, and song. (Su)

SIGN 178 Advanced Fingerspelling
Prerequisite: SIGN 108 2.0 minimum
Provides the student with advanced concentrated instruction and practice in both expressive and receptive fingerspelling skills. (F, Sp, Su)

SIGN 250 Deaf Culture and History
Prerequisite: SIGN 163 2.0 minimum
This course looks closely at the unique experiences of those in the deaf community. Examines the history of the deaf community in America and the sociology of the hearing-impaired (both deaf and the hard-of-hearing). (Sp)

SIGN 260 Linguistic Principles of ASL
Prerequisite: SIGN 163 2.0 minimum
An overview of the linguistic organization of ASL, including a linguistic perspective on how ASL is learned and how it is (and is not) influenced by English. Topics relevant to interpreting, such as language variation and translation, will be emphasized. (F)

SIGN 261 Principles of Interpreting
Prerequisite: ITP Screening
Surveys basic interpreting through lecture, role-playing, and classroom discussion. Introduces the ethics of interpreting, roles, and responsibilities of the interpreter. Examines the role and necessary skills of the interpreter in various settings: educational, mental health, vocational rehabilitation, legal, religious, phone, television, medical, deaf, blind, and minimal language skills. (F)

SIGN 262 Mock Quality Assurance (GA)
Prerequisite: SIGN 261 2.5 minimum
This course is designed to provide students with simulated testing interpreter/translating settings using interactive videotapes of hearing and deaf individuals with the purpose of developing skills necessary for interpreter evaluation. (Su)

SIGN 263 Intermediate Sign to Voice
Prerequisite: SIGN 164 2.5 minimum
This course is designed to develop and refine necessary basic skills and fluency in receptive sign language and for voicing all levels of communication of deaf individuals. Techniques taught include interpreter task analysis, listening, attending, internal message formulation, vocabulary search, and monitoring output. (SD)

SIGN 264 Advanced Sign to Voice
Prerequisite: SIGN 263 2.5 minimum
This course is an advanced class in skill development and fluency in voicing for all communication levels of deaf persons. Techniques taught are voice projection, breathing and relaxation, analysis of sign information, articulation and prediction, closure, modality switching, correction, image search, declage, and pacing. (F)
SIGN 265 Adv. Interpreting/Transliterat 3
Prerequisite: SIGN 262 2.5 minimum
This course is designed to continue the development of skills necessary for interpreter evaluation/qualification. Students will be provided with simulated testing situations using interactive videotapes of hearing/deaf individuals requiring students to interpret/transliterate. (F)

SIGN 267 Sign Internship I 3
Prerequisite: SIGN 261 2.5 minimum
Combines student interpreted lectures and supervised placement in various interpreting settings to allow directed observation and application of practical interpreting skills. Students will spend a total of 32 clock hours in their placement setting. (Su)

SIGN 268 Sign Internship II 3
Prerequisite: SIGN 267 2.5 minimum
Combines student interpreted lectures and supervised placement in various interpreting settings to allow directed observation and application of practical interpreting skills. Students will spend a total of 32 clock hours in their placement setting. (Su)

SIGN 269 Independent/Signt Sign Language 1–3
Prerequisite: SIGN 261 2.0 minimum
Individual projects in sign language or interpreting. Students will spend at least two hours a week for each credit in Independent study. (F, Sp, Su)

SOCL 120 Introduction to Sociology 4
Prerequisite: Reading Level 5
A survey of major theoretical perspectives, concepts, and methods of sociology. Emphasis is given to societal origins, evolution, and organization; culture; socialization; stratification; social institutions; and social change. (F, Sp, Su)

SOCL 185 Intro to African-American Study 3
Prerequisite: Reading Level 5 and Writing Level 6
A survey of culture and social structure of people of African descent and their role in the making of the US society. Theories and concepts pertinent to understanding the development and dynamics of contemporary African-American experience will be explored. Topics include slavery, multiculturalism, civil rights movement and affirmative action. (Sp)

SOCL 196 Japan Adventure Orientation 1
Prerequisite: None
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. (Sp)

SOCL 254 Marriage and Family 3
Prerequisite: (SOCL 120 1.0 minimum or PSYC 230 1.0 minimum) and Reading Level 5 and Writing Level 6
A study of the changes in society over the past century in terms of their dramatic impact on sexual relationships, marriage, and family life. Topics will include sex and gender roles, sexual behavior, values, psychological needs, divorce, and parenting. (F, Sp)

SOCL 255 Contemporary Social Problems 3
Prerequisite: SOCL 120 1.0 minimum and Reading Level 5 and Writing Level 6
Consideration of current social problems, such as family stability, environmental decline, educational decline, health care, public and private intolerance, racism, poverty, crime, and/or urbanization, from a framework of sociological theory and recent empirical studies. (F, Sp)

SOCL 260 Minority Groups 3
Prerequisite: SOCL 120 1.0 minimum and Reading Level 5 and Writing Level 6
An introduction to the culture and contemporary life styles of American minorities. Emphasis is placed on basic sociological and anthropological concepts with respect to selected minority groups, particularly the African American, Mexican American, Native American, and Asian American. (F, Sp)

SOCL 265 Independent Study in Sociology 1–4
Prerequisite: Department Approval
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)

SOWK 101 Introduction to Social Work 3
Prerequisite: Reading Level 5 and Writing Level 4
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, supervision of agencies and institutions, and overview of social issues and client needs relating to social work practice. (F, Sp, Su)

SOWK 203 Social Work Interviewing 3
Prerequisite: HUSE 100 2.5 minimum or SOWK 101 2.0 minimum
This course examines the purposes and basic concepts of the interview relationship with emphasis on the helping interview. It provides instruction in the techniques of interviewing with an opportunity to engage in practice interviews, including videotaping and feedback. (F, Sp)

SOWK 205 Social Welfare 3
Prerequisite: SOWK 101 2.0 minimum or HUSE 100 2.5 minimum
This course introduces the definition and concept of social welfare, its history, programs, attitudes, values, and philosophy. It emphasizes the development of private and public services, changing patterns of services, the evolving changes in the Social Security Act and community action, with attention to current issues in social welfare policy. (Sp)

SPAN 115 Conversational Spanish I 3
Prerequisite: None
First course of a two-semester sequence in conversational Spanish. Designed for persons who have no knowledge of Spanish and who wish to develop basic conversational skills in the language. Course emphasizes pronunciation of Spanish sounds, practical vocabulary, culture, and essential grammar for communication. Class taught largely in Spanish. (F, Sp, Su)

SPAN 116 Conversational Spanish II 3
Prerequisite: None
Recommended: SPAN 115 or Equivalent
Second course of a two-semester sequence in conversational Spanish. Designed for persons who have some knowledge of the language, and who 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)

SPAN 121 Elementary Spanish I 4
Prerequisite: Reading Level 5
First course of a two-semester sequence in elementary Spanish. Designed for persons with no knowledge of Spanish who wish to develop basic language skills. Elementary practice in listening comprehension, speaking, reading, and writing. Provides useful information about the Spanish-speaking world. Class taught largely in Spanish. (F, Sp, Su)

SPAN 122 Elementary Spanish II 4
Prerequisite: SPAN 121 1.5 minimum and Reading Level 5
Second course of a two-semester sequence in elementary Spanish. Introduces more complex structures while developing a foundation in the essentials of the language. Emphasizes practice in listening comprehension, speaking, reading, and writing. Provides useful information about the Spanish-speaking world. Class taught largely in Spanish. (Sp)

SPAN 201 Intermediate Spanish I 4
Prerequisite: SPAN 122 1.5 minimum and Reading Level 5
First course of a two-semester sequence in Intermediate Spanish. Begins with 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)

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SPAN 202 Intermediate Spanish II
Prerequisite: SPAN 201.5 minimum and Reading Level 5
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 intense discussions on the cultures of the Spanish-speaking world. Class taught entirely in Spanish. (Sp)

SPAN 202 - SPEECH & COMMUNICATION

SPCH 110 Oral Communicb in the Workplace
Prerequisite: Reading Level 5 and Writing Level 6
Introduction to oral communication skills in business and technology. Students will learn to interact effectively in diverse workplace situations. Activities include participating in interviews, managing group dynamics, orienting employees, giving planned presentations, and using current technology to enhance business communication. (F, Sp, Su)

SPCH 120 Dynamics of Communication
Prerequisite: Reading Level 5 and Writing Level 6
Introduction to the theory and practice of speaking and listening effectively in interpersonal, group, and public communication situations. The course utilizes readings, lectures, discussions, learning activities, and oral and written assignments to help students both understand the communication process and become more skillful interpersonal, group (team), and public communicators. (F, Sp, Su)

SPCH 130 Fundamental of Public Speaking
Prerequisite: Reading Level 5 and Writing Level 4
Helps beginning speakers develop the skills and confidence needed to speak effectively to audiences in public situations. Through a carefully planned series of speaking assignments, students learn the proper techniques for researching, developing, organizing, outlining, and delivering effective informative and persuasive speeches. (F, Sp, Su)

SPCH 140 Interpersonal Communication
Prerequisite: None
Introduction to fundamental principles and skills of interpersonal communication. Students investigate techniques for interacting effectively in family, interpersonal, and workplace 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 280 Nonverbal Communication
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
Prerequisite: Reading Level 5 and Writing Level 6
Introduction to broadcast, film, and print media and their impact on the individual and society. Students investigate theory and research on topics including values the media convey, media stereotypes, violence, news, advertising, and the role of media in political campaigns. Assignments and observational projects help students become enlightened media consumers. (Sp)

SPCH 280 Intercultural Communication
Prerequisite: None
Introduction to the theory and practice of successful intercultural communication. Students will investigate how communication is affected by such factors as: dimensions of culture, cultural values, world views, relationships, and social institutions. Readings, guest speakers, discussions, learning activities, and assignments will help students become ethical and skillful intercultural communicators. (Sp)

SPCH 295 Independent Study in Speech
Prerequisite: Department Approval
Individual projects in speech communication. Students will spend at least two hours a week for each credit in independent study. (F, Sp, Su)

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SPEL - SPELLING DEVELOPMENT

SPEL 150 Spelling: College Prep
Prerequisite: Reading Level 3 and Writing Level 4
Recommended: PHON 108
This eight-week course focuses on spelling rules and functions suited to various disciplines within the college and workplace. (F)

SPEL 165 Business Spelling
Prerequisite: Reading Level 3 and Writing Level 2
Covers sophisticated and specialized college-level words commonly misspelled and misused in business. Includes general spelling principles and their exceptions, unusual and unexpected spellings in the context of dictation, pronunciation, proofreading, and correct usage. (F, Sp)

STAT & STATISTICS

STAT 170 Introduction to Statistics
Prerequisite: (MATH 121 2.0 minimum or Math Level 8) and Reading Level 5 and Writing Level 4
Recommended: Knowledge of Windows Software
This is a survey course in statistics for students in social science, psychology, education, and other nonbusiness disciplines. Topics include descriptive statistics, 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)

STAT 215 Intro to Probability and Stats
Prerequisite: (MATH 122 2.0 minimum or MATH 126 2.0 minimum or MATH 130 2.0 minimum or MATH 141 2.0 minimum) and Reading Level 5 and Writing Level 4
Recommended: Knowledge of Windows Software
This is a first course in probability and statistics with emphasis on business applications. Topics include descriptive statistics, laws of probability, random variables, normal distribution, t distribution, chisquare 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)

STEC - STAGE TECHNOLOGY

STEC 100 Intro to Stage Tech Industry
Prerequisite: Department Approval
This course is an introduction to the stage technology industry for apprentices in the Michigan Stage Technician Apprenticeship Program. It presents the history and current status of the various segments of the industry and introduces basic stage skills, terminology, safety-concerns, and legal issues designed to prepare the student for on-the-job training. (Su)

STEC 120 Stage Lighting and Electricity
Prerequisite: None
Beginning studies in basic electricity and lighting as they relate to the stage. Students will learn fundamentals of electricity, metering, dimming circuits, physics of light and optics, instrumentation, reading of a plot, and various schedules. The student will then apply them in a theater setting. (F)

STEC 130 Audio/Visual Technology
Prerequisite: None
An introduction to audio/visual equipment, principles and practices used in the stage technology industry with an emphasis on television and theater sound systems. Includes television, lighting control systems, and corporate video. (Sp)

STEC 140 Theatrical Make-Up/Wardrobe
Prerequisite: None
Provides students with a working knowledge of basic principles of makeup application, wardrobe maintenance and procedures in a production environment. Prepares students to provide basic makeup and wardrobe services for live performing arts, including the theatrical play and dance productions, musicals and operas. An enrichment resource for community theater and schools. (F)
SURG 100 Fundamental Surgical Tech
Prerequisite: Admission to Surgical Technology Program
Co-requisite Courses: SURG 101 and SURG 121 and SURG 122
Introduction to role and function of the surgical technologist as a member of the surgical team. Lectures present all skills, procedures, and protocol necessary to participate in the operating room. (F)

SUGR 101 The Surgical Patient
Prerequisite: Admission to Surgical Technology Program
Co-requisite Courses: SURG 102 and SURG 121 and SURG 122
Lectures will present the protocol and procedures directly affecting the care and safety of the patient. This includes the ethical, legal, and moral responsibilities of the technologist, the concepts of patient care, and preoperative routines. (F)

SUGR 103 Surgical Asepsis
Prerequisite: ANAT 140 2.5 minimum
This course defines and describes the 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)

SUGR 104 Operative Procedures
Prerequisite: AHCC 106 2.5 minimum and AHCC 110 2.5 minimum and
SUGR 100 2.5 minimum and SURG 101 2.5 minimum and
SURG 103 2.5 minimum and SURG 122 2.5 minimum
Co-requisite Courses: SURG 123 and SURG 124
Lectures will present indications for surgery, patient preparation, special equipment and supplies, purpose and expected outcome, and possible complications. (Sp)

SUGR 121 Applied Surg Techniques I
Prerequisite: Admission to Surgical Technology Program
Co-requisite Courses: SURG 100 and SURG 101
Clinical session at hospital. Students first experience of application of theory and clinical skills in actual surgical procedures. (F)

SUGR 122 Applied Surg Techniques II
Prerequisite: SURG 121 2.5 minimum or Concurrently
Co-requisite Courses: SURG 100 and SURG 101
Clinical session at hospital. Students first experience of application of theory and clinical skills in actual surgical procedures. (F)

SUGR 123 Applied Surg Techniques III
Prerequisite: SURG 122 2.5 minimum
Co-requisite Courses: SURG 104
Clinical session at hospital. Continued application of theory and clinical skills in advanced surgical procedures. (Sp)

SUGR 124 Applied Surg Techniques IV
Prerequisite: SURG 123 2.5 minimum or Concurrently
Co-requisite Course: SURG 104
Clinical session at hospital. Application of theory and clinical skills in advanced surgical procedures and surgical specialty areas. (Sp)

TOTT 110 Truck Driver Training I
Prerequisite: Department Approval and Department of Transportation Physical
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 DOT rules and proper driver's log book reporting. Some vehicle orientation is included. (F, Sp, Su)

TOTT 111 Truck Driver Training II
Prerequisite: Department Approval and Department of Transportation Physical
This is the second course in a sequence of three. Students will operate the vehicle or the driving range and local roads, developing the skills necessary to interact with highway traffic. (F, Sp, Su)

TOTT 112 Truck Driver Training III
Prerequisite: Department Approval and Department of Transportation Physical
This is the final course in the Truck Driver Training Program. The student will complete range driving and backing, do local highway driving, and complete an extensive road trip. The CDL third-party exam will be administered during this course. (F, Sp, Su)

TECH 154 Boat Building
Prerequisite: None
The student 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, alternative construction methods, materials required, and laying out the hull. (F, Sp, Su)

THEA 101 Basic Stagecraft
Prerequisite: Department Approval
Recommended: Knowledge of Basic Math and Measurement
Introduction to the techniques of stage craft for the performing arts; the basic fundamentals involved in tool usage and safety, stage lighting, lighting plot interpretation, and understanding of the organization of backstage production. (F, Sp, Su)

THEA 110 Introduction to Theatre
Prerequisite: Reeding Level 5
Introduction to Theatre includes definition and analysis of theatrical art, incorporating script analysis, theatre history, the relationship between theatre and the culture from which it comes, and the roles of theatre practitioners. (F, Sp, Su)

THEA 111 Basic Stagecraft
Prerequisite: Department Approval
Recommended: Knowledge of Basic Math and Measurement
Introduction to the techniques of stage craft for the performing arts; the basic fundamentals involved in tool usage and safety, stage lighting, lighting plot interpretation, and understanding of the organization of backstage production. (F, Sp, Su)

THEA 116 Scene Design I
Prerequisite: THEA 111 2.0 minimum or Concurrently
Introduction to the elements of design and how they relate to performance. Introduction to color theory as it relates to paint, light, and fabric. Techniques of rendering, translation of a picture to three-dimensionality, spatial relationships, and development of a design concept are also covered. (Sp)

THEA 120 Introduction to Acting
Prerequisite: None
Exposes 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 short scenes. (F, Sp, Su)

THEA 131 Studio Theatre Performance I
Prerequisite: Theatre Studio Interview
Restriction: Theatre Majors
Co-requisite Courses: THEA 141 and THEA 171
Course includes rehearsal, performance, and evaluation of a contemporary script. Focus is on understanding and implementation of skills acquired in THEA 141 and the relationships experienced between actor and director. (F, Sp, Su)

THEA 132 Studio Theatre Performance II
Prerequisite: THEA 131 2.0 minimum
Restriction: Theatre Majors
Co-requisite Courses: THEA 142 and THEA 172
Course includes rehearsal, performance, and evaluation of verse script or scenes from Shakespeare or the classical Greeks. Focus is on understanding and implementation of skills acquired in THEA 142, and on relationship between actor and director. Majors only. (Sp, Su)

THEA 141 Acting I - Contemporary
Prerequisite: Theatre Studio Interview
Restriction: Theatre Majors
Co-requisite Courses: THEA 131 and THEA 171
Fundamentals of acting, including improvisational techniques; mask work, the physical, vocal, and internal development of character; analysis and scoring by beats of a contemporary script. Majors only. (F, Sp)
THEA 142 Acting II - Classics 2.5
Prerequisite: THEA 141 2.0 minimum
Restriction: Theatre Majors
Co-requisite Courses: THEA 132 and THEA 172
Fundamentals of acting in heightened context. Students will pursue improvisational work, mask work, and scansion. Students will develop understanding of power of language through verse scansion and the physical, vocal, and internal development of characters from classical literature. Majors only. (Sp, Su)

THEA 171 Dramatic Form and Function I 3
Prerequisite: Theatre Studio Interview
Restriction: Theatre Majors
Co-requisite Courses: THEA 131 and THEA 141
An analysis of modern contemporary classics of the theatre. The student will read and analyze a minimum of eight contemporary scripts from Ibsen to Shepard. The student will develop a comprehensive production concept for one of these scripts. (F, Sp)

THEA 172 Dramatic Form and Function II 3
Prerequisite: THEA 171 2.0 minimum
Restriction: Theatre Majors
Co-requisite Courses: THEA 132 and THEA 142
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 analyzing them using Aristotelian analysis, and research one script in terms of production styles through history. (Sp, Su)

THEA 181 Improvisation 2.5
Prerequisite: THEA 142 2.0 minimum
Restriction: Theatre Majors
Co-requisite Courses: THEA 233 and THEA 261 and THEA 281
By using the improvisational techniques of mask work and developmental exercises, this course will train the student in longform, in-depth character development. (F)

THEA 210 Theatre History 4
Prerequisite: Reading Level 5 and Writing Level 5
Recommended: THEA 110
Examination of the history of drama from primitive times to the present, introducing the overall pattern of theatre history with emphasis on European and American development. Required for all majors. (F)

THEA 223 Directed Study 1-3
Prerequisite: Department 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 224 Special Subjects in Theatre 1-4
Prerequisite: Department Approval
Seminar: Special Subjects in Theater is offered each summer and allows students to take a variety of short-term courses in various theatre techniques. The seminar will offer either state-of-the-art techniques or an opportunity to work with professionals. Seminars may include: stage combat, playwriting, new techniques in acting. (Su)

THEA 233 Studio Theatre Performance III 1
Prerequisite: THEA 132 2.0 minimum
Restriction: Theatre Majors
Co-requisite Courses: THEA 181 and THEA 261 and THEA 281
Studio Theatre Performance III provides rehearsal and performance opportunities in original interpretation and/or readers theatre presentations. Usually offered in eight-week format. Second-year theatre majors only. (F)

THEA 234 Studio Theatre Performance IV 1
Prerequisite: Studio Theatre Performance 4 Audition
Studio Theatre Performance IV provides rehearsal and performance opportunities during a four-week format on an outdoor stage. Students will develop one character and work on physical and vocal projection for large spaces. Limited to individuals who have been selected as cast members in Turner House Festival Productions. (Su)

THEA 235 Studio Theatre Performance V 2
Prerequisite: THEA 233 2.0 minimum
Restriction: Theatre Majors
Co-requisite Courses: THEA 241 and THEA 271 and THEA 281
Studio Theatre Performance V provides the second-year theatre major an opportunity to explore a specific theatrical period or style in both rehearsal and performance. (Sp)

THEA 237 Theatre Special Projects 1-2
Prerequisite: Department Approval
Student will be given the opportunity to direct, design, perform, or produce productions for College functions on the main stage or comparable space. Limited to individuals who have been selected as cast members or technical or design staff in a scheduled LCC performance. (F)

THEA 238 Theatre Company 2
Prerequisite: Theatre Application Process
Students will be given the opportunity to direct, design, produce, or perform in College-supported outdoor theatrical events in the 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 2.5
Prerequisite: THEA 142 2.0 minimum
Restriction: Theatre Majors
Co-requisite Courses: THEA 235 and THEA 271 and THEA 281
Explores acting techniques and styles of different historical periods and cultures. Students will survey a cross-section of acting styles and periods then focus on in-depth exploration of particular period or style. Class limited to second-year majors. In-depth area of study selected by instructor. (Sp)

THEA 251 Stage Voice for the Actor 3
Prerequisite: THEA 142 2.0 minimum
Restriction: Theatre Majors
Co-requisite Courses: THEA 161 and THEA 233 and THEA 281
Course will cover strategies in vocal production and variety; will focus on exercises to develop vocal flexibility from Lesche, Linklater, and/or Breyer techniques; and will experience vocal techniques which lead to greater emotional awareness and responsiveness. For second-year theater majors. (F)

THEA 261 Movement for the Actor 2
Prerequisite: THEA 142 2.0 minimum
Restriction: Theatre Majors
Co-requisite Courses: THEA 161 and THEA 233 and THEA 251
Course will cover strategies developing student's physical endurance, reflect, flexibility, and grace. Students will learn the human inner experience in the sphere of human silence. Students may explore movement to music, mime, and dance styles and techniques from world cultures. For second-year theatre majors. (F)

THEA 271 Dramatic Form and Function III 3
Prerequisite: THEA 172 2.0 minimum
Restriction: Theatre Majors
Co-requisite Courses: THEA 216 and THEA 241 and THEA 281
Students will study a particular topic through different theatrical forms, plays, and historical periods. The class culminates in each student's selection of a topic and completion of research into the theatrical response to that topic. For second-year theater majors. (Sp)

THEA 281 Advanced Improvisation II 1
Prerequisite: THEA 181 2.0 minimum
Restriction: Theatre Majors
Co-requisite Courses: THEA 235 and THEA 241 and THEA 271
Students will study a particular topic through different theatrical forms, plays, and historical periods. The class culminates in each student's selection of a topic and completion of research into the theatrical response to that topic. For second-year theater majors. (Sp)

THEA 283 Audition Workshop 1
Prerequisite: THEA 142 2.0 minimum
Restriction: Theatre Majors
An intense workshop in which participants prepare and polish audition materials suited for a professional audition or audition for advance training. Course usually taught by guest actors, agents, or teachers from larger theatrical or film markets. (Su)

THEA 285 Stage Makeup 2
Prerequisite: None
A course in the application of stage makeup to develop a character and to assist the actor in sustaining the character in performance. Emphasizes skills in the use of different kinds of makeup, hairstyling, and appearance changes. (Sp)

THEA 295 Acting Styles I 2
Prerequisite: Theatre Acting Styles Audition
An elective course for advanced students, this course will give the student an opportunity to explore theatrical styles from musical theater to the Greeks. Style is selected by instructor previous to given semester. Usually offered in eight-week format. (F)
THEA 299  Acting Styles Performance  2
Prerequisite: Theatre Acting Styles Performance Audition
Students choose to rehearse and perform an in-class presentation of skills developed in THEA 295. Usually offered in eight-week format. (Sp)

TRVL 130  Travel Agency Operations  3
Prerequisite: Reading Level 3
Gain a working knowledge of the reference materials used in the travel industry, as well as industry terminology and overall travel agency operations. (F, Sp, Su)

TRVL 125  Destinations I  3
Prerequisite: None
Examine geography fundamentals as they affect tourism. Emphasis is on travel destinations in North, Central, and South America with specific information relative to client appeal. (F, Sp)

TRVL 130  Destinations II  3
Prerequisite: None
Examine geography fundamentals as they affect tourism. Emphasis is on travel destinations in Europe, Africa, and the Middle East with specific information relative to client appeal. (F, Sp)

TRVL 131  Destinations III  3
Prerequisite: None
Examine geography fundamentals as they affect tourism. Emphasis is on travel destinations in Asia and the Far East (including the Philippines, Japan, Australia, New Zealand and Oceania) relative to client appeal. (F, Sp)

TRVL 135  Airline/Airport Operations  3
Prerequisite: None
Introduction to the responsibilities of airline and airport personnel, as well as the functions of an airport and airline carriers. Discussion includes ticket counter operations, the gate area, cargo handling and loading, aircraft weight, and the principles of aeronautics. (F)

TRVL 140  Airline Computer Reservation I  3
Prerequisite: None
Recommended: TRVL 100 and Typing 30 wpm
The first of a three course sequence utilizing the American Airlines SABRE reservation system. Hands-on application in the Travel Computer Lab gives students the skills required for creating airline computer reservation as well as fare and fare rules. (F, Sp, Su)

TRVL 145  Intro Cruise Sales/Ground Tran  3
Prerequisite: None
An exposure to, and understanding of, the reference materials used to sell cruises, railroads, car rentals, and motor coach travel for domestic and international destinations. (Sp)

TRVL 146  Seminar at Sea  2
Prerequisite: None
An exciting opportunity to explore cruising first hand. Included in the cruise are ship tours, cruise activities, shore excursions, and inspections of pier/lock facilities. (F)

TRVL 170  Owning/Managing Trvl Agency  3
Prerequisite: None
Recommended: 2.6 minimum in TRVL 100 and TRVL 140
Learn how to open or acquire a travel agency. Includes an examination of co-ops, consortia, and franchise options, as well as an overview for managing daily operations. (F)

TRVL 180  Flight Attendant  3
Prerequisite: None
Recommended: TRVL 136 2.0 minimum
A career as a flight attendant is examined including the duties and responsibilities surrounding passenger service, crew scheduling, aircraft equipment, and the airline interview process. (Sp)

TRVL 190  Internship and Seminar  3
Prerequisite: HMFS 101 2.0 minimum
Recommended: Minimum 2.0 in TRVL 100 or TRVL 135 or TRVL 210
Available to students who have completed or are approaching 200 hours of work experience in tourism or travel agency operations. A term project is required. (Sp, Su)

TRVL 200  Sales/MTg for Travel/Tourism  3
Prerequisite: None
Recommended: HMFS 101 2.0 minimum
Understand marketing strategies by identifying client needs, product, price, and promotion. Develop professional sales skills, as well as examine and develop advertising pieces. (F, Sp)

TRVL 210  Group Travel/Escorting Ops  4
Prerequisite: None
Recommended: Minimum 2.0 in HMFS 101 and TRVL 145
Learn how to organize and escort both domestic and international group tours. Includes procedures for locating the group, assembling and marketing the tour package, and effectively conducting the tour. (F, Sp)

TRVL 230  Travel/Tourism Law  3
Prerequisite: HMFS 101 2.0 minimum
Recommended: Minimum 2.0 in TRVL 100 or TRVL 135 or TRVL 210
Become aware of the responsibilities and rights which the law imposes on the travel industry. Includes current topics and pending laws and discussion of the consequences that result in violating the law for different segments of the industry. (F, Sp)

TRVL 250  Airline Compr Resv II  3
Prerequisite: TRVL 140 2.0 minimum
The second of a three course series utilizing the Sabre system which progresses to in-depth fare research and application, as well as fare rules, and hotel reservations for domestic and international travel. (F, Sp)

TRVL 260  Travel Agency Accounting  2
Prerequisite: None
Recommended: TRVL 130 2.0 minimum
A course designed to explain and describe basic travel agency accounting concepts. Approximately one-half of the course will be dedicated to the compilation and interpretation of financial statements. The other half of the course will discuss how accounting systems should be constructed for the travel agency business. (F, Sp)

TRVL 265  Fundamentals of Bus Travel  3
Prerequisite: TRVL 250 2.0 minimum
Recommended: Minimum 2.0 in HMFS 101 and TRVL 145 and TRVL 210 and TRVL 230
Learn how to manage the many issues surrounding business/corporate travel. Special requests, international reservations, fare rules and audits, economy exchange, Internet research, and frequent flyer program management for business/corporate travelers, as well as the customs, cultures, and protocols involved in international travel are emphasized. In addition, extended use of the Sabre computer reservation system is utilized. (F, Sp)

VCBL 150  Vocabulary: College Prep  1
Prerequisite: Reading Level 3 and Writing Level 4
Recommended: PHON 108
This eight-week course focuses on the acquisition of vocabulary appropriate to the various disciplines within the college and workplace. (F, Sp)

VCBL 160  Vocabulary: College Prep  2
Prerequisite: Reading Level 3 and Writing Level 4
Recommended: PHON 108
Focuses on advanced skills as follows: pronunciation, spelling, and usage of words with the intended goal of mastery which will assure a college or professional vocabulary level. (F, Sp)

LANSLING COMMUNITY COLLEGE 2000–2001  261

THEA 296–VCBL 160
2000-2001 Catalog Lansing Community College

www.lcc.edu
WELD 100 Combination Welding 4
Prerequisite: None
This is a beginning theory and practice course which will introduce the safe operations and applications of oxyacetylene welding, cutting, brazing and shielded metal arc welding. Practice will consist of these methods of joining steel in the horizontal, flat and vertical positions. Destructive testing will also be provided. (F, Sp, Su)

WELD 101 Advanced Arc Welding 4
Prerequisite: WELD 100 1.5 minimum
Students will develop the skills necessary to produce quality multiple pass fillet and groove welds on steel plates. Conventional and low hydrogen electrodes are used in preparation of passing performance tests in all positions. Destructive testing methods, weld profiles and welding symbols as related to arc welding are introduced. (F, Sp, Su)

WELD 110 Gas Metal ARC Welding 4
Prerequisite: WELD 100 1.5 minimum
This course covers the principles 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 4
Prerequisite: WELD 100 1.5 minimum
This course covers the principles and applications of gas tungsten arc welding and plasma arc welding. Welds will be done on different thicknesses of ferrous and non-ferrous metals in all positions. Proper material cleaning, fit up and safety are also introduced. (F, Sp, Su)

WELD 120 Structural Fabrication/Inspection 4
Prerequisite: WELD 101 1.5 minimum
Introduction to steel fabrication in accordance with the American Welding Society Structural Welding Code D1.1 applications and requirements. The student will be introduced to the numerous destructive and nondestructive methods of welding inspections. Satisfactory completion of the course will assist the student in passing the welding certification test. (F, Sp)

WELD 125 Structural Blueprint Reading Weld 2
Prerequisite: MATH 050 1.0 minimum or Math Level 4
Blueprints and welding symbols are the universal language of the welding industry. This course is for students, apprentices, technicians and others who must develop the ability to read and accurately interpret blueprints. Teaches awareness of the advancements in metallurgy, welding processes, consumables and strict code enforcement used in industry today. (F)

WELD 130 Bridge Building Past/Present 3
Prerequisite: Reading Level 5 and Writing Level 4 and Math Level 4
An introduction to the design, fabrication and history of truss bridges. Students learn methods of historic bridge construction that are also relevant to modern industry. The course surveys the history of technology and engineering-related to metal truss bridges with a steel bridge context as a capstone project. (F)

WELD 191 Welding Project Lab 1-4
Prerequisite: Department Approval
An opportunity for students to expand upon welding skills in maintenance welding, production welding, resistance welding and/or tool and die welding. Depending on the direction the student would like to take his/her welding skills. Actual projects must be discussed and agreed upon by both the instructor and the student. (F, Sp)

WELD 201 Tool and Die Welding 4
Prerequisite: WELD 101 1.5 minimum and WELD 111 1.5 minimum
Theory and practice methods involved in welds various alloyed metals, preheating and postheating of metals, recognition of materials, alloying elements and their effects. The proper usage of air, oil and water hardening steels will also be covered. (F, Sp)

WELD 205 Pipe Welding 4
Prerequisite: WELD 101 1.5 minimum
Theory, cutting, fit up and practice on different sizes of pipe using shielded metal arc welding. Welded weld and base metal testing methods are used to test the strict code requirements. Focus on low hydrogen type electrodes in groove and fillet welds in the 2G, 5G, and 6G positions. (F)

WELD 210 Aircraft Welding 2
Prerequisite: Department Approval
Prepares students for welding applications and methods used in repairs and inspection of aircraft structures in accordance with approved aircraft maintenance techniques. (F, Sp)

WRIT 101 Writing Laboratory I 1
Prerequisite: Reading Level 1 and Writing Level 1 and Department Approval
One-credit course designed to teach fundamental writing skills and improve confidence. Provides small-group and one-to-one instruction. Department approval required. (May repeat for credit three times.) (F, Sp, Su)

WRIT 102 Writing Laboratory II 2
Prerequisite: Reading Level 1 and Writing Level 1 and Department Approval
Two-credit courses designed to teach fundamental writing skills and improve confidence. Provides small-group and one-to-one instruction. Department approval required. (May repeat for credit three times.) (F, Sp, Su)

WRIT 103 Writing Laboratory III 3
Prerequisite: Reading Level 1 and Writing Level 1
Three-credit course designed to teach fundamental writing skills and improve confidence. Provides small-group and one-to-one instruction. (May repeat for credit three times.) (F, Sp, Su)

WRIT 104 Writing Laboratory IV 4
Prerequisite: Reading Level 1 and Writing Level 1
Four-credit course designed to teach fundamental writing skills and improve confidence. Provides small-group and one-to-one instruction. (May repeat for credit three times.) (F, Sp, Su)

WRIT 110 Confidence in Writing 4
Prerequisite: Reading Level 3 and Writing Level 2
Recommended: Minimal Typing Skills Desirable
Designed to help students understand the writing process, reduce writing anxiety, and develop basic writing skills. Emphasizes planning, composing, and revising strategies for expository writing. Provides frequent writing practice in a supportive workshop environment. Students who earn exit competency of 2.5 will have a writing skill level of 4. (F, Sp, Su)

WRIT 114 Business English 3
Prerequisite: Reading Level 3 and Writing Level 4
This course is designed to review all parts of grammar, punctuation, and sentence structure. There will be an emphasis on usage of style. Proper usage of proper grammar, punctuation, capitalization, possessives, number usage, plurals, and mechanics for written business communication. Business English is required for machine transcription and business communication. (F, Sp, Su)

WRIT 117 Writing Preparation II 4
Prerequisite: Reading Level 3 and Writing Level 4
Designed to help students improve their writing in preparation for transfer-level academic courses. Students who earn exit competency of 2.5 will have a writing skill level of 6. (F, Sp, Su)

WRIT 118 Personal Writing 3
Prerequisite: None
Explores the forms of personal writing (diaries, journals, letters, personal narratives, and autobiography) through written exercises and selected readings. The student's observations and life experiences are the focus of written assignments. Emphasizes language, style, and tone appropriate to the different forms of personal writing. (F, Sp)

WRIT 119 Writing Skills Review 1
Prerequisite: Reading Level 5 and Writing Level 6
Designed to help WRIT 121-122 comprehension students, and others, improve their basic sentence and mechanics skills by providing intensive writing and editing practice in a workshop setting. (F, Sp, Su)
WRIT 121 Composition I
Prerequisite: Reading Level 5 and Writing Level 6
The study and practice of expository and argumentative discourse to help students write more effectively. Emphasizes writing process, critical thinking, content development, organization, and style. Students will select their best work for their portfolios, which will be externally assessed. Some sections use computers. Others are offered over Internet or interactive television. (F, Sp, Su)

WRIT 122 Composition II
Prerequisite: WRIT 121 2.0 minimum or WRIT 131 2.0 minimum or (Reading Level 5 and Writing Level 5)
Builds upon the writing skills developed in WRIT 121 to help students write argumentative essays which use logical support and appropriate documentation. Emphasizes research techniques and use of sources, and the development, structure, and style of the research paper. Some sections use computer classrooms. Others are offered over the Internet or interactive television. (F, Sp, Su)

WRIT 124 Technical Writing
Prerequisite: Reading Level 5 and Writing Level 5
Recommended: Computer and/or Keyboarding Experience
A college-level course in the study and practice of technical writing in a variety of formats for select audiences. Covers writing business letters, short reports and memos, formal reports, instructions and definitions, and job application letters and resumes. Students learn basic research techniques. Students will work individually and collaboratively. (F, Sp, Su)

WRIT 127 Business Writing
Prerequisite: Reading Level 5 and Writing Level 5
Recommended: Computer and/or Keyboarding Experience
College-level study of the theory and practice of business communication in a variety of forms, with emphasis on letters, memos, and written reports. Includes research-based reports. Also covers job applications, resumes, and collaborative reports. (F, Sp, Su)

WRIT 128 Business Report Writing
Prerequisite: Reading Level 5 and Writing Level 6
This course defines the wide range of reports required in the business world. It emphasizes conducting research, using primary and secondary sources, and writing both informal and formal business reports and proposals. An oral presentation is also required. (F, Sp)

WRIT 131 Honors Composition I
Prerequisite: Reading Level 5 and Writing Level 7
The study and practice of expository and argumentative discourse to help students write more effectively. Emphasizes writing process, critical thinking, content development, organization, and style. Students will select their best work for their portfolios, which will be externally assessed. Some sections use computers. Others are offered over Internet or interactive television. (F, Sp)

WRIT 132 Honors Composition II
Prerequisite: WRIT 121 3.5 minimum or WRIT 131 3.5 minimum
Builds upon the writing skills developed in WRIT 121 to help students write argumentative essays which use logical support and appropriate documentation. Emphasizes research techniques and use of sources, and the development, structure, and style of the research paper. Some sections use computer classrooms. Others are offered over the Internet or interactive television. (F, Sp)

WRIT 195 Writing User Documentation
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 250 Issues in Teaching Writing
Prerequisite: WRIT 121 2.0 minimum or WRIT 131 2.0 minimum or (Reading Level 6 and Writing Level 6)
The study and application of current scholarship relevant to pedagogy and practice of a college writing center. Emphasizes major aspects of writing process, composition theory and its application in the writing center, daily practices of writing center work, and development of skills necessary to provide effective writing assistance. (Sp)

WRIT 262 Prose Style
Prerequisite: None
An advanced study of non-fictional prose writing. Extensive directed practice helps experienced writers make their own writing clear, precise, direct, and graceful. Workshop sessions include a study of the expectations and choices in various kinds of writing, and of the relationships among purpose, structure, words, sentences, grammar, punctuation, and style. (Sp)

WRIT 263 Reviewing the Arts
Prerequisite: None
Develops criteria for evaluating the visual and performing arts, music, and literature. Sharpensth 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 261 Writing for Publication
Prerequisite: None
Recommended: WRIT 121 2.0 minimum or WRIT 131 2.0 minimum
Study of freelance writing and marketing with focus on modification. Students review a variety of effective writing techniques, study marketing information for their particular fields, such as analysts 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 262 Forum for Authors
Prerequisite: WRIT 261 2.0 minimum
An advanced course in freelance writing for authors working on manuscripts. Students meet in a workshop setting to refine ideas, critique writing, solve problems, and develop material for submission to periodical or book editors. Includes advanced study of effective writing techniques and market information. Occasional speakers. Word processing available. (Sp)

WRIT 235 Creative Writing I
Prerequisite: None
Recommended: WRIT 121
WRIT 235 is designed to help students develop expressive abilities in writing poetry and short stories. Emphasizes narrative modes of the short story, traditional meter, and free verse forms of poetry. Includes models from students and masters in both fiction and poetry. (F, Sp)

WRIT 236 Creative Writing II
Prerequisite: WRIT 235 2.0 minimum or WRIT 355 2.0 minimum
Emphasizes improving the ability to write effective poems, short stories, and novellas. Students select their own topics and receive immediate responses through group discussion. (F)

WRIT 287 Writing Workshop
Prerequisite: Department Approval
Examines language and style as the most critical choices a creative writer makes in directing the reader's perception of and response to the work. Develops the writer's ability to control tone and style. Manuscripts will be reprinted and discussed in a workshop setting. (Sp)

WRIT 295 Independent Study in Writing
Prerequisite: Department Approval
Individual projects in writing. Students will spend at least two hours a week for each credit in independent study. (F, Sp, Su)
Special Courses
DESIGNATIONS

CHEM 115 Environmental Issues of Japan 3
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 3
Prerequisite: Department Approval
Restriction: Civil Technology Majors
Provides first-year civil technology students with practical work experience in their career field. The student works for the Michigan Department of Transportation (MDOT) in jobs related to highway and bridge construction as well as attending in-class instruction. Enrollment is restricted to MDOT Civil Technology cooperative education students. (Su)

COOP 272 Cooperative Education MDOT II 3
Prerequisite: Department Approval
Restriction: Civil Technology Majors
Provides second-year civil technology students with practical work experience in their career field. The student works for the Michigan Department of Transportation (MDOT) in jobs related to highway and bridge construction, as well as attending in-class instruction. Enrollment is restricted to MDOT Civil Technology cooperative education students. (F, Su)

HMFS 170 Menu Management and Design 3
Prerequisite: HMFS 131 2.0 minimum
Recommended: Minimum 2.0 in HMFS 101 and HMFS 135
Design a menu using accurate descriptive terms, calculation of selling prices, layout recommended include selection of fonts and colors, includes analysis of menus including accuracy (truth in menu); the menu as a marketing tool, and current trends. Semester project included. (F)

HMFS 177 Intro Hotel and Food Serv Ops 1
Prerequisite: None
A look at the hotel/food service industry, its management departments, and responsibilities. Designed specifically for Japan Adventure/Horizon students. (F, Sp, Su)

HMFS 190 Japan Adventure Internship 2
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 191 Japan Adventure Internship 2
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 193 Practicum in Japanese Culture 2
Prerequisite: None
Introducing the principles and philosophy of Japanese calligraphy and the use of abacus and understanding of various types of Japanese traditional dresses. Practical training in calligraphy and abacus. (F, Sp, Su)

HMFS 195 Practicum in Japanese Culture 3
Prerequisite: None
Introducing the principles and philosophy of Japanese calligraphy and the use of abacus and understanding of various types of Japanese traditional dresses. Practical training in calligraphy and abacus. (F, Sp, Su)

HUMS 125 Japan: Past and Present 3
Prerequisite: WRIT 121 2.0 minimum or WRIT 131 2.0 minimum or (Reading Level 5 and Writing Level 5)
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)

POLS 280 Politics & Government of Japan 3
Prerequisite: None
An introduction to the Japanese governmental structures and political processes, with emphasis on the unique characteristics of Japanese political culture, Japanese style of decision-making, and Japanese concepts of democracy. (F, Sp)

RDGR 101 Personal Reading I 1
Prerequisite: Reading Level 1 and Writing Level 1
One-credit laboratory course may be taken concurrently with other reading courses to provide extra instruction and practice. One-to-one instruction. (May repeat for credit three times.) (F, Sp, Su)

RDGR 102 Personal Reading II 2
Prerequisite: Reading Level 1 and Writing Level 1
Two-credit laboratory course may be taken concurrently with other reading courses to provide extra instruction and practice. One-to-one instruction. (May repeat for credit three times.) (F, Sp, Su)

RDGR 103 Personal Reading III 3
Prerequisite: Reading Level 1 and Writing Level 1
Three-credit laboratory course may be taken concurrently with other reading courses to provide extra instruction and practice. One-to-one instruction. (May repeat for credit three times.) (F, Sp, Su)

SDEV 110 Leadership Development I 3
Prerequisite: None
Develop leadership skills through course, class discussion, and application. Assists students in increasing their understanding of themselves, others, and the ideas and techniques of leadership. Specific skills include: understanding your personal philosophy, decision making, and leading others. (F, Sp)

SDEV 111 Leadership Development II 2
Prerequisite: SDEV 110 2.0 minimum
Provides an opportunity to further develop and apply leadership skills introduced in the previous course. Students will learn and apply skills related to leadership, community college administration, and student leadership. (Sp)

SDEV 112 Leadership Development III 2
Prerequisite: SDEV 111 2.0 minimum
Provides an opportunity to apply leadership skills introduced in SDEV 110 and SDEV 111 in the community college setting. Students will help lead the student government, attend monthly meetings, and make recommendations. (F)

SDEV 113 Leadership Development IV 2
Prerequisite: SDEV 112 2.0 minimum
Provides an opportunity to apply leadership skills introduced in SDEV 110/111 and learn skills related to student government and community service. Students will select community service projects and plan events. (F)

SOCI 280 Intro to Japanese Culture 3
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)

WRIT 101 Writing Practice I 1
Prerequisite: Reading Level 1 and Writing Level 1 and Department Approval
May be taken concurrently with other writing courses to provide extra instruction and practice. (May repeat for credit three times.) (F, Sp, Su)

WRIT 102 Writing Practice II 2
Prerequisite: Reading Level 1 and Writing Level 1 and Department Approval
May be taken concurrently with other writing courses to provide extra instruction and practice. (May repeat for credit three times.) (F, Sp, Su)
WRTR 103 Writing Practice III
Prerequisite: Reading Level 1 and Writing Level 1 and Department Approval
May be taken concurrently with other writing courses to provide extra individualized instruction and practice. (May repeat for credit three times.) (F, Sp, Su)

WRTR 104 Writing Practice IV
Prerequisite: Reading Level 1 and Writing Level 1 and Department Approval
May be taken concurrently with other writing courses to provide extra individualized instruction and practice. (May repeat for credit three times.) (F, Sp, Su)
The English Language & Culture Center of International Programs

Intensive English language instruction for international students and professionals

GENERAL INFORMATION
The English Language and Culture Center (ELCC) provides intensive English language instruction primarily to international students who need to improve their English skills to succeed in college-level academic coursework. The Center also provides customized English language and American culture instruction to groups that need specialized programs for professional or other activities. The ELCC is located in the International Programs Office, and its courses are non-credit. The ELCC issues I-20 forms to international students.

COURSES
The ELCC offers the following courses at 6 different levels:

- COURSES: Grammar, Speaking/Listening, Reading and Writing
- LEVELS: High Beginning; Intermediate I and II; and Advanced I, II, and III.
- INSTRUCTIONAL HOURS: 6 hours/week
- SESSION LENGTH: 8 weeks

TOEFL preparation courses (3 hours/week) are also offered in each session.

TUITION & FEES
Contact the ELCC office at (517) 483-1006.

APPLICATION & INFORMATION
To apply or obtain more information, call the ELCC office at (517) 483-1006 or call LCC's toll-free line at 1-800-644-4LCC and ask to be connected to the ELCC. Or check our website at: http://www.lansing.cc.mi.us/executive/IntlProg/ELCC/index.htm

COURSE DESCRIPTIONS

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit</th>
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<tbody>
<tr>
<td>NCEL 111</td>
<td>High Beginning Speaking/Listening</td>
<td>non-credit</td>
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<tr>
<td>NCEL 112, 113</td>
<td>Intermediate Speaking/Listening I and II</td>
<td>non-credit</td>
</tr>
<tr>
<td>NCEL 114, 115, 116</td>
<td>Advanced Speaking/Listening I, II, and III</td>
<td>non-credit</td>
</tr>
</tbody>
</table>

Prerequisite: Placement test or pass the immediately preceding course
Six-session sequence in speaking and listening English. Designed to provide American English Language instruction through listening and speaking exercises for non-native students who wish to pursue college level course work. Students will practice the production of target sound, discussing various topics, note-taking, and various other tasks to develop oral and listening skills.

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<thead>
<tr>
<th>Course</th>
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<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>NCEL 121</td>
<td>High Beginning Reading</td>
<td>non-credit</td>
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<tr>
<td>NCEL 122, 123</td>
<td>Intermediate Reading I and II</td>
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<tr>
<td>NCEL 124, 125, 126</td>
<td>Advanced Reading I, II, and III</td>
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</tbody>
</table>

Prerequisite: Placement test or pass the immediately preceding course
Six-session sequence in reading English. Designed to develop increased reading proficiency for non-native students who wish to pursue college level courses. Students will read various materials which they may encounter during their academic studies. Emphasizes vocabulary building, gaining reading speed, summarizing main ideas, note-taking, and various reading strategies.

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<tr>
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<td>Advanced Writing I, II, and III</td>
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Prerequisite: Placement test or pass the immediately preceding course
Six-session sequence in English writing. Designed to help non-native students improve their writing skills for preparation for college courses. Emphasizes process-oriented writing, including brainstorming, outlining, drafting, and revising. Students will work on writing well-developed and cohesive paragraphs and essays, as well as learning various rhetorical styles.

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<td>NCEL 144, 145, 146</td>
<td>Advanced Grammar I, II, and III</td>
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Prerequisite: Placement test or pass the immediately preceding course
Six-session sequence in standard American English grammar. Designed to help students increase their proficiency in writing, reading, and speaking and listening. Emphasizes grammatical structures in various contexts, including verb structures, articles, logical connectors, comparatives and conditionals. Attention will be given to grammatical forms and their appropriate use.

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Prerequisite: Intermediate Grammar II
Two-session sequence in TOEFL preparation. Designed to prepare students for the computer-based TOEFL test. Will help students become familiar with particular computer-based TOEFL tests, including the grammar, vocabulary, and listening comprehension materials frequently encountered in these tests. Students also become familiar with the TOEFL writing (TWE) format.
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Service Area Map

These School Districts constitute the LCC Resident District
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.
Learning Center Locations
Extension and Community Education

- LCC classes are held at local schools in partnership with Community Education Offices in these locations.

For more information call the Extension and Community Education Office at (517) 483-1860

**BATH**
Bath High School

**CHARLOTTE**
Charlotte High School

**DANSVILLE**
Dansville High School

**DEWITT**
DeWitt High School

**EAST LANSING**
Bailey Community Center
East Lansing High School

**FOWLER**
Fowler High School

**FOWLERVILLE**
Fowlerville High School

**GRAND LEDGE**
Grand Ledge High School
Grand Ledge Sawdon

**HASLETT**
Haslett Center for Community Education

**HOLT**
Holt High School
Holt Horizon School
Holt Junior High School

**HOLLOW**
Livingston County Center
Howell High School

**MASSON**
Capital Area Career Center
Heartwood School
Mason High School

**OKEMOS**
Chippewa Middle School
Okemos Community Education Center

**OWNSSO**
Owosso High School

**PORTLAND**
Portland High School

**SHIAWASSEE COUNTY**
Byron High School
Corunna High School
Durand High School
Laingsburg High School
Morrice High School
Perry High School
Shiawassee RESD

**ST. JOHNS**
Rodney B. Wilson School

**STOCKBRIDGE**
Stockbridge High School

**WAVERLY**
Waverly High School
Waverly Middle School

**WILLIAMSTON**
Williamston High School